TEXTILE WORLD

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ENEMY TEXTILES

SEE PAGE 79

Color Dynamics

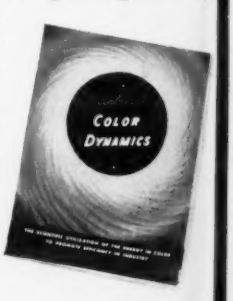
—the new science of color energy widely used in the textile industry to build up workers' morale—to decrease eye fatigue and accidents—and to improve quality and quantity of production.

THE new science of Color Dynamics embraces every known contribution that color can make towards increasing efficiency in industry.

In applying the principles of Color Dynamics, Pittsburgh technicians give special attention to the effect of color on workers' morale—and on their safety. In painting walls, ceilings and floors, color becomes a "plus factor" wherever used.

Pittsburgh technicians have made a detailed study of the causes of "eye fatigue." As a result, entirely new methods for painting machines have been developed. These methods minimize *eye fatigue* . . . enable each operative to produce more work—and better work—with less effort.

Color Dynamics may be applied to your plant gradually—as money becomes available from your maintenance budget. A free copy of the new book "Color Dynamics" will be mailed to any executive interested in production. You will find this study of the utilization of color energy both stimulating and practical. For your copy write Pittsburgh Plate Glass Co., Paint Division, Dept. TW-10, Pittsburgh 22, Pa.



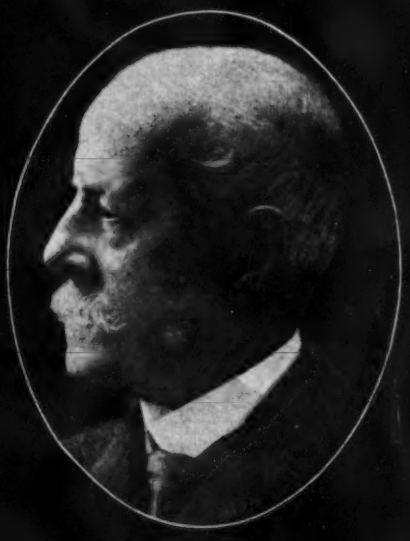
PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PENNA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

TEXTILE World, Vol. 94, No. 10, October, 1944. Published monthly by McGRAW-HILL PUBLISHING CO., INC. (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executive Offices, 330 West 42nd Street, New York, (18) N. Y. Allow at least ten days for change of address.
Subscriptions: United States and Possessions, and Latin American Republics, $1.50 a year, $2.00 for two years, $3.00 for three years. Canada $2.00 a year, $3.00 for two years, $4.00 for three years. Great Britain and British Possessions 12 shillings for one year, 17 shillings for three years. All other countries $2.00 for one year, $4.50 for three years. Entered as second class matter August 25, 1936, at Post Office, Albany, N. Y. under the act of March 3, 1879. Printed in U. S. A. Twenty-five cents per copy.

The Cotton Mill of the Future as Foreseen in 1896



Hon. William C. Lovering
Member of Congress and
Leader among Textile Men
in the 1890's and
Early 1900's.

About 16 months after the first Northrop Loom was installed at Burlington, Vt., the late Hon. William C. Lovering, then one of the eminent men of the textile industry, read a paper before the Arkwright Club of Boston in which he tried to vision the Cotton Mill of the Future.

In that address, published in the Scientific American of May 2, 1896, he predicted 20 Looms per weaver, which has been fulfilled 5 times over. It is interesting to compare that then fantastic prophecy with today's reality.

The Prophecy

"Let us look into a possible weave-room of the future running on plain two-harness work such as print cloth and sheeting, if you will. On a single floor, there are a thousand looms run by fifty weavers, whose only duty will be to mend broken warp threads and start the looms."

The Reality

A 600 Loom mill in the South running on Osnaburgs with 6 weavers, 6 fixers and 6 battery hands.

Scores of mills with 1000 looms on print cloth operated by 10 weavers.

The record so far—124 looms per weaver.

Today, Reality Often Transcends Prophecy.

DRAPER CORPORATION

invasion tactics call for TEXTILES

TARPAULINS and tents . . . camouflage cloth and hammock netting . . . thousands of textile "munitions" come in with the LST's to invasion beachheads. To equip just one soldier takes 120 yards of cotton cloth alone.

Because textiles are so important, mills *must* maintain maximum production. And a big help in assuring continuous, trouble-free operation of textile machinery is Texaco lubrication.

Texaco Spindura Oils, for example, permit higher spindle speeds and heavier packages by cushioning against vibration, resisting hunting and lagging. They assure more uniform tension and twist . . . a smoother, stronger yarn . . . by resisting oxidation and thickening. They lessen fogging and stock spoilage.

Texaco lubricants have proved so effective in service they are definitely preferred in many fields, a few of which are listed at the right.

Texaco Lubrication Engineering Service is available to you through more than 2300 Texaco distributing points in the 48 States. The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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TEXACO

REG. T. M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

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TEXTILE WORLD

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A McGRAW-HILL PUBLICATION

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TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles, Posselt's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2, U. S. currency or 12 shillings. Single copy, 25c. Annual index in "Textile World Yearbook & Catalog."

McGRAW-HILL PUBLISHING CO., INC., Publication Office, 99 N. Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 W. 42nd Street, New York 18, N. Y.—JAMES H. McGRAW, *Founder and Honorary Chairman;* JAMES H. McGRAW, Jr., *President;* HOWARD EHRLICH, *Executive Vice-President for Business Operations;* JOHN ABBINK, *Executive Vice-President for Editorial Operations;* HENRY G. LORD, *Vice-President;* CURTIS W. McGRAW, *Vice-President and Treasurer;* J. A. GERARDI, *Secretary;* J. E. BLACKBURN, *Director of Circulation,* Bragdon, Lord & Nagle Division—FRANK L. NAGLE, *Chairman;* HENRY G. LORD, *President.*

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Of this issue 16,625 copies were printed

Member of Audit Bureau of Circulations

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Editorial

The Effect of V-E DAY

ALTHOUGH, UNFORTUNATELY, V-E DAY now appears to be retreating into the distance, the brief interval when it seemed imminent served to focus attention on its probable effect on the textile industry. The conclusions reached are worth recording here for future reference, even though further study may call for their modification before the conquest of Germany is complete.

While Washington is still debating as to whether our national economy as a whole will face inflation or deflation after V-E Day, it is reasonably certain that most price pressures in textiles will be distinctly upward. This is because reconversion in the textile field is going to be prolonged by, if not military needs, at least foreign relief and rehabilitation needs. Therefore, textiles will remain in short supply, with civilian-goods inventories at the lowest point in recent history, with a public anxious to replenish its wardrobe, and with commercial-export demands reaching unprecedented proportions.

Opposing these upward pressures, however, are several factors. First, it seems likely that the drastic reconversion required in some of the durable-goods industries will put as many as two and one-half million people temporarily out of work. To these may be added, either concurrently or contiguously, some million and a half service men released within a few months after V-E Day. While most of these people will want to buy textiles and will have money to do so, they are likely to be more cautious than would be the case if they could enjoy a complete sense of income security, and they will be more resistant to high prices in consumer goods. Secondly, in those industries which face early reconversion, there may be considerable shrinkage in working hours, with particularly the elimination of overtime, causing a lowering of purchasing power. And, finally, there will be a certain amount of surplus textile goods reaching the market, relieving the shortages in several lines.

BUT IT SEEMS CLEAR THAT none of these deflating influences will be sufficient to cut the demand for textiles below the supply, or even to make it balance with the supply; and this can mean only steady pressure against the artificial price ceilings.

That some ceilings should be and will be maintained seems obvious. While the Office of Price Administration and also the War Production Board are working toward the early release of controls on all industry whenever and wherever possible, both agencies are agreed, it is reported, that to include most textiles would bring chaos. It is felt that the removal of export controls alone would be sufficient to bring clothes rationing to the American public for the first time.

WHETHER OR NOT we like the thought of the continuance of artificial controls, the conditions which make it necessary are healthy influences for the industry after V-E Day. They will prolong our reconversion period at a time when those industries which furnish the textile industry with its equipment and supplies are free to resume deliveries. The textile industry will be able to modernize and re-equip itself in a period when both its production and its income are guaranteed to be high. In this way it will well serve the American economy during the start of widespread reconversion, since it will offer an active market for the manufacturers of machinery, lighting and air-conditioning equipment, chemicals, and countless other products. Also, it will help absorb any army of unemployed created by reconversion in other lines.

The textile industry may need all the employees it can get. One prominent mill finds, upon investigation, that many of its employees are planning extended vacations at an early date. They "are tired" and want to use their accumulated savings for relaxation and diversion. Many women want to go back to their homes when the patriotic urge which now keeps them working is past. A considerable number of men want to return to their stores, their gasoline stations, their roadside stands, and the other small businesses which they operated largely on their own before the war.

Ordinarily one might worry that such a state of activity when all controls on the purchase of equipment and on the increase of capacity are off would lead to an unhealthy expansion of the industry, bringing overproduction and financial collapse at a later date. Fortunately, this seems to be physically impossible, because the textile-machine shops are so far behind on production and deliveries it is doubtful that they could meet a sudden demand for large expansion.

Elwin L. Towle

Rhoads Engineering Service

. . . has helped other mills Lower Costs and Increase Production

As specialists in the manufacture and application of leather belting the engineering service we can offer the textile manufacturer is based on sound practice—on experience gained over many years. Customers have frequently secured real savings and lowered cost per yard of cloth through increased efficiency of their drives. Tell us your problem.

TANNATE has outstanding endurance that results in a long lifetime of hard service with little maintenance needed to keep it in good running condition. It is exceptionally strong, much stronger and more flexible than most first quality oak belting. Its unusual flexibility and pulley grip assures greater power transmission and keeps machines producing at top speeds even when the load fluctuates. Tannate is resistant to moisture, machine oils and many weak chemicals. All these advantages go toward making Tannate the economical belt for textile mill service.

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Equip with RHOADS
Tannate
WATERSHED
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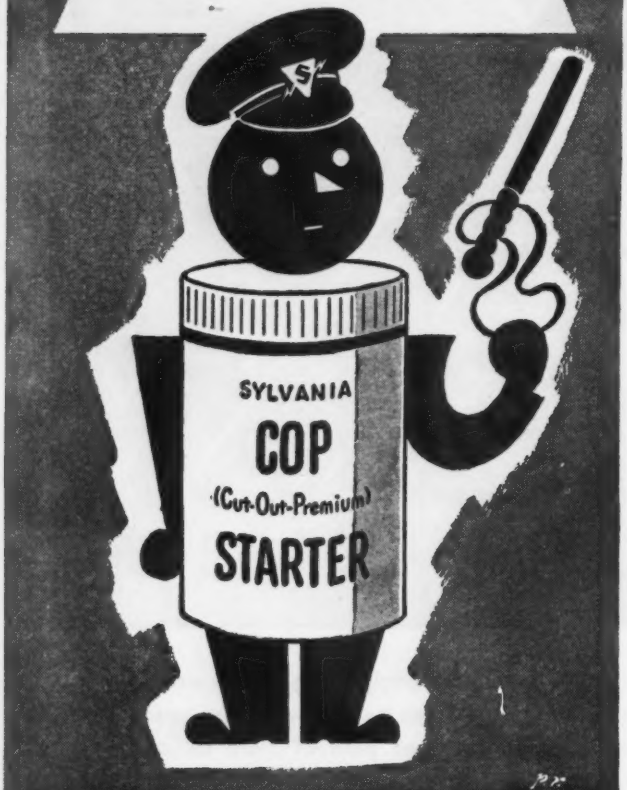
THE COP

(Cut-Out-Premium)

STARTER

"One of Sylvania's Finest"



The COP (Cut-Out-Premium) Starter is ready to patrol your fluorescent installation to protect your lighting investment. The COP brings you the finest method yet designed by Sylvania engineers to cut a failed lamp out of the circuit.

The COP is equipped with a handy push button to reset the positive new circuit breaker. When you replace a failed lamp, you just push the button, and the COP continues to operate normally until another lamp fails.

The COP has shown a life expectancy five times that of the average starter in months of exhaustive tests under all possible operating conditions. That is why Sylvania particularly recommends the COP as a means of reducing the cost of maintaining fluorescent.

The COP stops annoying lamp blinking and flickering by cutting a failed lamp out of the circuit immediately.

The COP guards your electric meter, preventing waste of current.

The COP protects the ballast from overheating.

Post the COP, Sylvania's finest quality starter, on your own fluorescent "beats." For information, write to Sylvania Electric Products Inc., Boston Street, Salem, Massachusetts.

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WITH BETTER THAN EVER PERFORMANCE

A metal flag is spot-welded to the stationary contact post in the gas-actuated Sylvania FS Glostat Starter. This metal flag assures correct lamp cathode preheating. The new FS Glostat Starter is quicker-starting, can take rough handling, and preheats adequately for maximum lamp life. Recommended by Sylvania engineers for economy and efficiency in smaller fluorescent installations.

One Standard—the Highest Anywhere Known

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FLUORESCENT LAMPS, FIXTURES AND ACCESSORIES, INCANDESCENT LAMPS, RADIO TUBES, CATHODE RAY TUBES, ELECTRONIC DEVICES

Every Belt a Specialist

In Allis-Chalmers' Great New V-Belt Line!

When Allis-Chalmers recommends a certain belt for a certain job, you can be sure it's the *right* belt. Because: 1) the Texrope line is *complete;* 2) Allis-Chalmers invented the multiple V-belt drive, offers engineering advice based on unparalleled experience. Both sound reasons for making Allis-Chalmers your "V-Belt Drive Headquarters."

1

HEAT-RESISTING SUPER-7, made of Buna-S synthetic rubber, has ability to withstand heat built right into it. Standard Super-7 belt, it can successfully operate in ambient temperatures up to 180 degrees F.

2

OIL-RESISTING SUPER-7 specializes in operating under fairly bad oil conditions. Neoprene, a synthetic impervious to oil, grease, other grimy liquids, is the cover for the regular Buna-S Texrope V-belt core.

3

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4

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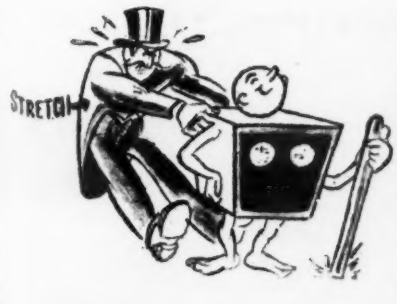
♪ *Tune in the Boston Symphony, Blue Network, every Sat. Eve.*



5

SUPER-7-STEEL employs endless cables of steel to reduce belt-stretch, provide greater horsepower. It is used where V-belt drive centers are hard to adjust, loads to be driven are extra heavy, space is limited.

A-1731

It pays to make

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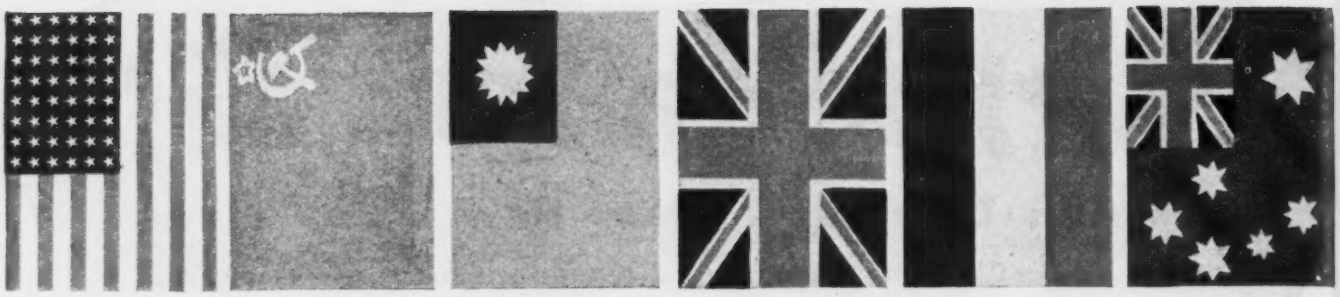
V-BELT DRIVE HEADQUARTERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.



FIDELITY

War-Time Developments will be ready for peace ★ ★ ★

The prospect of peace beckons you to investigate what FIDELITY MACHINES can make better for you—better in time, cost and practical effectiveness.

There are machines we are not yet talking about that will make important contributions to the textile industry, but which will be ready for day of transition. Others, now limited to military uses, will be applied to the products of peace. Announcement of these must wait.

There are machines for wire winding, wire covering, hose reinforcement, for skein reeling, for the garment industry, for medical use, for electrical and electronic industries, for testing and inspecting fabric and hose, which you can get now under suitable priority.

FIDELITY also can help you bring an embryo machine of your own brain into practical form and then make it for you to use or sell in quantity. The best of modern equipment is backed up by more than a third of a century in designing and producing some hundreds of intricate, precision machines. Write for illustrated book.

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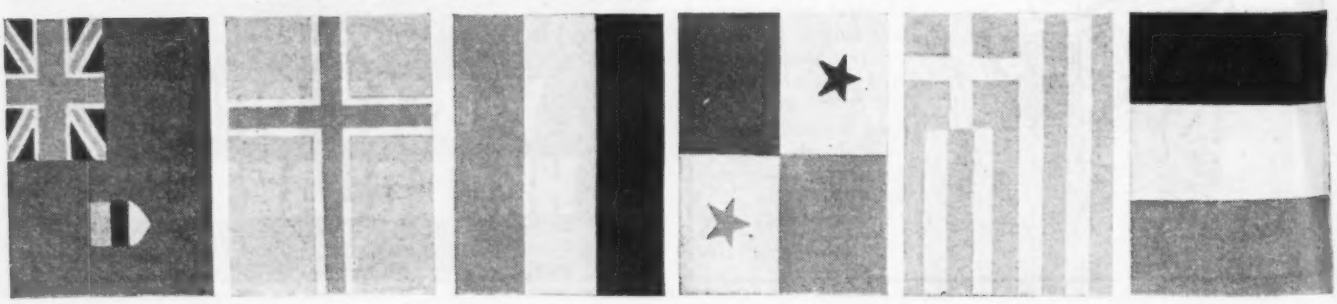


WHEN THE FLAMES DIE DOWN OVER THERE—
what happens over here?

MERITS OF ALLEGHENY METAL

- ★ Great strength, retained at extremes of heat and cold.
- ★ Tough and impact-resistant.
- ★ Favorable strength-weight ratio.
- ★ Highly corrosion-resistant.
- ★ Inherent, lasting beauty.
- ★ Easy to form and weld.

ON one thing we're all agreed—the lights of industry in this country must die down as little and as briefly as possible, in the turn-back to peace. Getting tools and dies ready—knowing how you'll start, what products you'll make, what materials you'll need—those are patriotic as well as economic necessities *now*, without taking away at all from the first importance of the war.

In working your problems of redesign and new design, when you come to the matter of materials, that's where we can be of help. Remember that the function of Allegheny Metal, pioneer stainless steel in America, is always to *improve:* strength, service life, cleanliness, appearance—whatever means most in your market. Call on us for any assistance you need. Allegheny Ludlum Steel Corporation, Brackenridge, Pa.

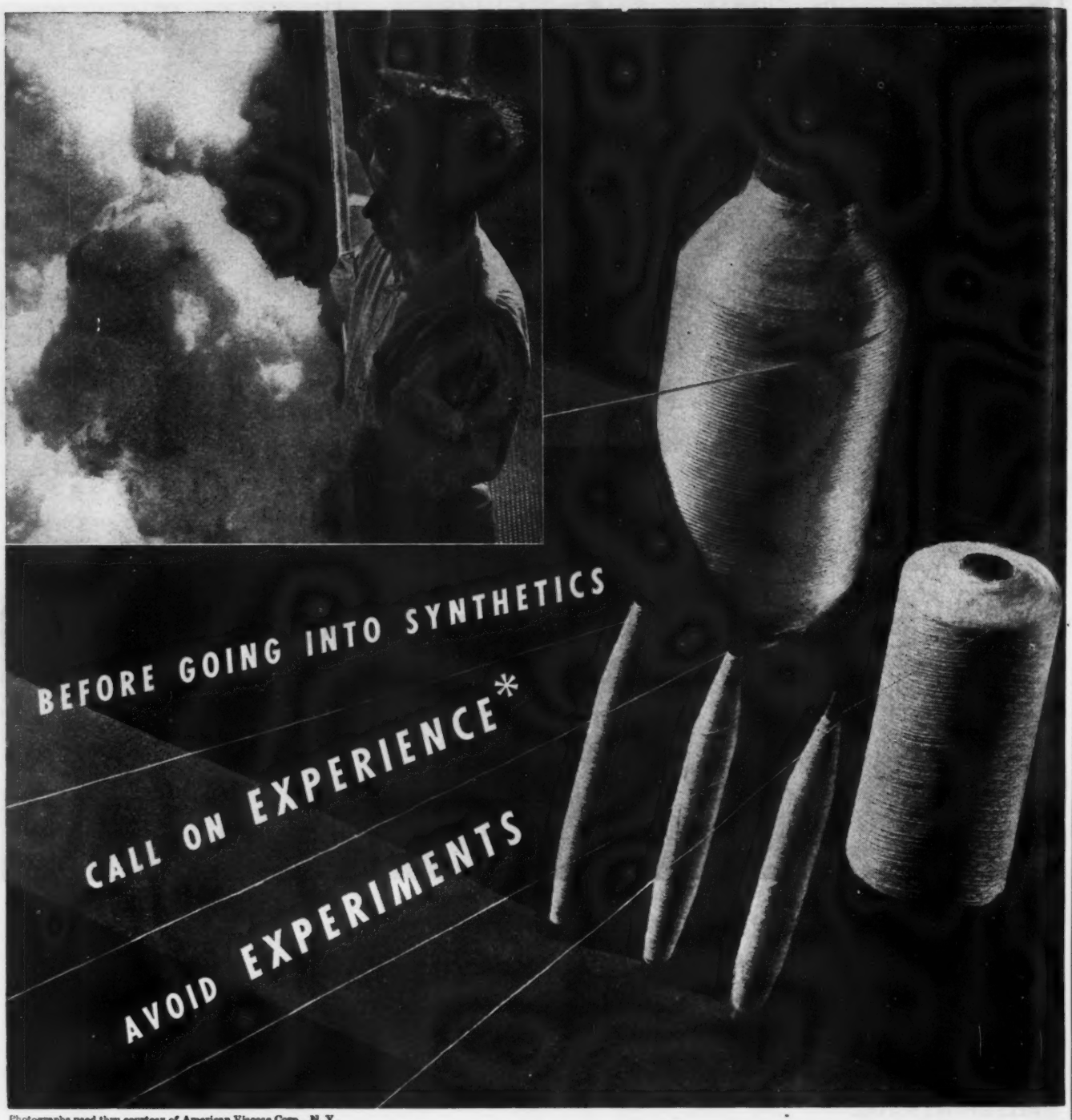
Allegheny Metal is also handled and stocked by all Joseph T. Ryerson & Son, Inc. warehouses

ALLEGHENY METAL

The Time-Tested Stainless Steel

W&D 9495 B

REMEMBER THE NAME TODAY FOR THE NEEDS OF TOMORROW



Photographs used thru courtesy of American Viscose Corp., N. Y.

* *In designing the specialized equipment necessary to blend, prepare and spin synthetics, Saco-Lowell has acquired an invaluable knowledge of these fibers . . . their characteristics, reactions and uses.*

While we cannot supply you at present with new machinery which we have designed and perfected for handling synthetics, we can tell you what this new equipment is like, what you may expect of it, and what further research is in process or planned. If you intend to enter this growing and bright-futured field, now is the time to get your facts . . . to make your plans. Our engineers can be of great assistance to you in this preliminary work, and are available for consultation now.

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60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS *Charlotte Greenville Atlanta*

MAXIMUM POWER OUTPUT AT DRIVEN END

— that's why the revolutionary new Goodyear Steel Cable V-Belt is the ultimate belt for all heavy-duty Multi-V drives. Matched for multiple service — they remain permanently matched—and eliminate all stretch problems. *More than 1,000,000 now in use on essential war equipment.*

24 hours a day
7 days a week
52 weeks a year

It is so outstanding, practically all of Goodyear's production is requisitioned today for military equipment. You're going to want it as soon as available. Better get the full story now from the G.T.M. — Goodyear Technical Man. Or write Goodyear, Akron 16, Ohio, or Los Angeles 54, California — or phone the nearest Goodyear Industrial Rubber Products Distributor.

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1. Heavy, super-tough black cover with uniform friction, longer life
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BUY WAR BONDS ☆ BUY FOR KEEPS

SLIP-PROOFING with new, inorganic resins

Both these swatches of a lightweight rayon came from the same bolt . . . yet simply rubbing them between your fingers would reveal a startling difference in slippage.

As in the photograph (1) above, the threads of one would separate easily . . . The second would be unaffected.

Put them both through the much more exact A.S.T.M. test for seam slippage . . . and the second swatch would rate at least 50% better than the first.

The second swatch has been slip-proofed with Syton W-20, one of a group of new finishing agents with fascinating possibilities developed by Monsanto textile laboratories.

Specifically, the Sytons are colloidal solutions of polymerized silica, or, in simpler terms, colloidal quartz. When as little as 1% of these amazing inorganic resins is deposited on the individual fibres of silks, nylons, rayons or cottons, slippage is reduced by 50% and more.

The Sytons are effective on a wide range of fabrics, from dress fabrics to sheer hosiery. They can be applied to fabrics in existing mill equipment and are well adapted to present mill practices.

In short, the Sytons are another practical step forward toward *better* fabrics . . . at *lower* production costs . . . through the closer partnership between chemicals and textiles.

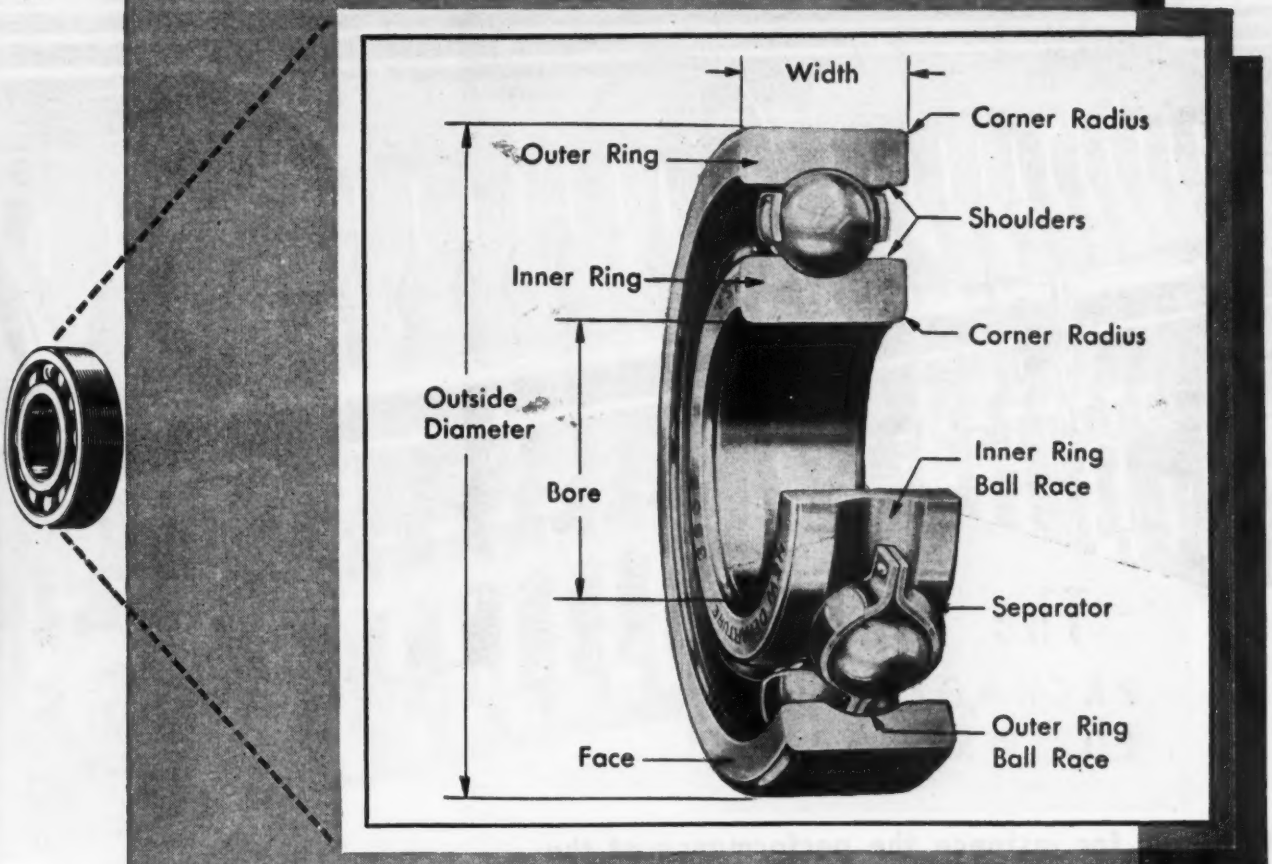
As with other, equally promising new Monsanto products for tomorrow's textiles, the Sytons will not be offered for general commercial use until they have been thoroughly proved in mill trials . . . If you are particularly interested in slip-proofing, however, we will be glad to discuss the possibility of arranging trials in your mill on your particular fabrics . . . Simply write or wire: Monsanto Chemical Company, Merrimac Division, Everett Station, Boston 49, Massachusetts.

Divisions cooperating in Monsanto textile research in addition to Merrimac Division include: Central Research Laboratories at Dayton, Ohio; Organic Chemicals Division and Phosphate Division at St. Louis, Missouri; Plastics Division at Springfield, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING AN INDUSTRY . . . WHICH SERVES MANKIND

Ever wonder about the anatomy of a Ball Bearing?



The subject of the Ball Bearing is on everyone's lips nowadays, because of its immense importance to the prosecution of the war.

But how many know what a ball bearing is—what it does—why it is so indispensable?

A ball bearing is not merely a steel ball! It consists of the assembled mechanism illustrated.

It is used wherever shafts turn, to support loads, to permit higher, smoother speeds. Because nothing rolls like a ball, it reduces friction and wear and assures that the precise "location" of machine parts is maintained.

To those who would know more about this "tremendous trifle" we offer free an interesting 112 page book entitled, "Why Anti-Friction Bearings?"

nothing rolls like a ball

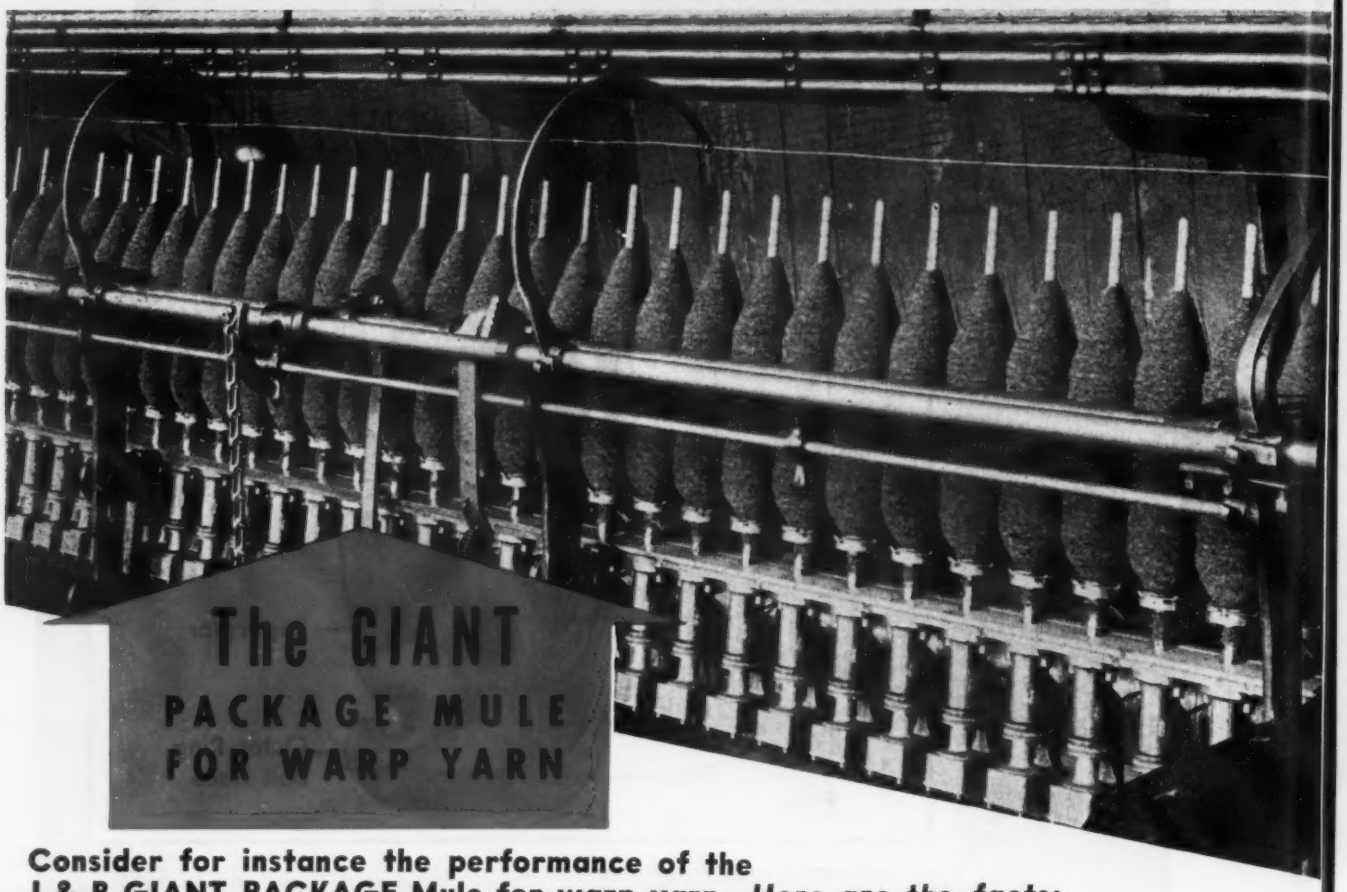
NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

Sales Branches: DETROIT, G.M. Bldg., *Trinity 2-4700* • CHICAGO, 230 N. Michigan Ave., *State 5454* • LOS ANGELES, 5035 Gifford Ave., *Kimball 7161*

WHEN IS A MULE



Consider for instance the performance of the J & B GIANT PACKAGE Mule for warp yarn. *Here are the facts:*

1. **15% REDUCTION IN CARDING COST,** as compared with other spinning methods, because it can handle a coarser roving.
2. **33⅓% SAVING IN FLOOR SPACE,** due to increased production per spindle.
3. **33⅓% MORE SPINNING PRODUCTION,** because of the GIANT package, which runs at the same speed as the small package, but holds up to 7¼ times more yarn and therefore requires less frequent doffing; also because a yarn of a given tensile strength can be produced on the modern J & B Mule with 36 to 40 turns less twist than other methods or by frame spinning.
4. **54.5% REDUCTION IN SPOOLING TIME,** because the GIANT package, being a larger supply, reduces doffing.
5. **LOWER BURLING COSTS,** due to less knots (as much as 60% reduction at times). Fabric quality improved for same reason.
6. **A BETTER YARN** because it's MULE SPUN. The mule principle produces a stronger, evener, more elastic, more lofty and truer diameter yarn than other methods of spinning. Furthermore, this superior quality can be obtained indefinitely because of construction materials used in the machine and because of advanced machine design.

JOHNSON & BASSETT

NOT A MULE?...

You may think that "a mule is a mule," that all mules are practically the same, that there hasn't been any notable improvement in mule design for the last 75 years. If so, that's because you don't know the present J & B Mule. This mule still looks much like its predecessors, but is as superior to old mules IN PERFORMANCE as a modern automobile is to its original ancestor.

MEDIUM AND SMALL PACKAGE MULES FOR SMALL LOTS OF WARP YARN AND FOR FILLING INCREASE EFFICIENCY FROM 20% TO 47%

A predominance of small lots makes the GIANT Package Mule impracticable for warp yarns, but even in such cases important increases in production can be effected by using a 9" to 10½" bobbin instead of the usual 8" or 8¾". Increases in production in such cases range from 31% to 47%.

Modern J & B Small Package Mules for filling will also increase production up to 40%. This is due to the improved J & B spindle which is used in ALL types of J & B mules. These mules may also be equipped with our patented bunch builder, for automatic shuttles, which save 3¢ to 4¢ per lb. in rewinding costs.

IMPROVED J & B SPINDLE

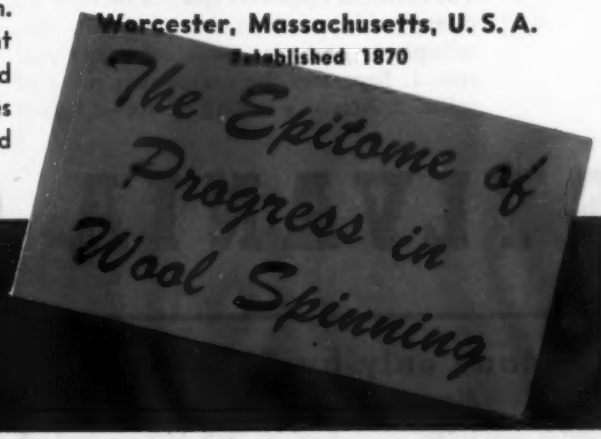
This spindle is the outstanding feature of all modern J & B Mules. Many mules now in use can be equipped with it at reasonable cost, if they are in good condition. It is mounted as a unit in a bolster attached to a metal collar board, with a collar board bearing of "Durex" and the lower bearing a ball bearing. The support of the lower bearing allows the spindle to adjust itself to eccentric loads and prevents vibration. Elimination of the step rail means that spindle bearings are permanently aligned and that sticking is eliminated. Spindles are free running. Therefore, the speed variation between them is surprisingly small, making possible more even yarn.

Tell us what your production problem is and we'll recommend a J & B Mule installation. Your inquiry will not obligate you in any way.

JOHNSON & BASSETT, INC.

Worcester, Massachusetts, U. S. A.

Established 1870



MULES

FIRE WARDEN AND SPACE SAVER!
...a dual job for Mr. Cellophane

THIS IS AN ELECTRIC CABLE. Inside are wires wrapped with Sylvania cellophane. This cellophane is both flame-retardant and space saving. The reason it conserves space is because it is extremely thin. And on this vital job, Sylvania cellophane performs three other essential duties: 1. Separates the component parts of the cable. 2. Acts as a coding device—different colored cellophane indicating different strands of the cable. 3. Aids in insulation.

The versatility of Sylvania cellophane makes it indispensable for war. However, the developments Sylvania is making today will profit you well in the postwar tomorrow. They will result in more uses for cellophane . . . and a better cellophane.

SYLVANIA CELLOPHANE

Made only by SYLVANIA INDUSTRIAL Corporation

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 122 E. 42nd St., New York 17, N. Y. ★ *Works and Principal Office:* Fredericksburg, Va.

SYLVANIA CELLOPHANE

• Reg. Trade Mark

SANDOZ PRESENTS

the Color Achievement of the Month

Sheer Magic

BY

VAN RAALTE

From ivory to honey-gold, sun-burnished rose and beige . . . choice of the right color is one of the secrets of her head-to-toe radiance, her marble-smooth leg-slimness.

Sandoz, while anticipating the return of Nylons, and preparing now for the post-war fibres to come, congratulates Van Raalte on the sheer-textured beauty of wartime stockings such as these.

This month, Sandoz technicians, accustomed to "think ahead with textiles", present for your consideration Visco Brown 2RB, Visco Orange GGA and Visco Brown PG, a group of colors specially selected for the exacting requirements of level-dyeing hose, and for their good unionizing properties on rayon and cotton combinations.

You, too, may profit by consulting with Sandoz regarding your needs for acid, chrome and direct dyes, and auxiliary chemicals for all natural and synthetic fibres. For instance, Sandoz Perlof and Ceranine Finishes are exceptionally well qualified to produce soft texture and correct lustre on modern hosiery.

Sandoz' application laboratories are maintained in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto. You will find stocks in those cities. Other branches in Chicago, Paterson and Providence.

Look for another Sandoz "Color Achievement" next month, featuring the work of another leader in the Textile Industry's color parade.

SANDOZ CHEMICAL WORKS, INC.
61 Van Dam Street, New York 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

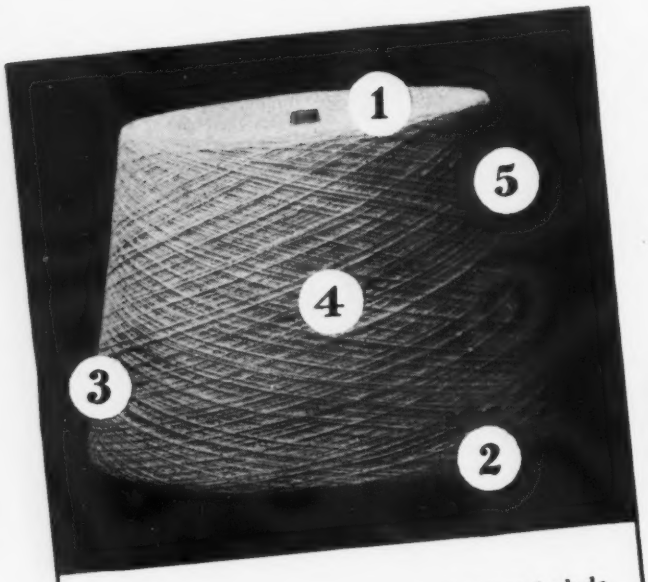
CONES THAT SATISFY KNITTERS FROM THE MACHINE THAT SIMPLIFIES CONING

More and more knitters consider Roto-Cones *standard* for cotton knitting yarns. Yarn mills operating Roto-Coners* report enthusiastic reception and requests for *more* Roto-Cones. Meanwhile, orders we are receiving from spinners indicate a widespread intention to replace old winding equipment with Roto-Coners*, the modern drum winders which simplify operation and maintenance and offer the opportunity to increase winding production.

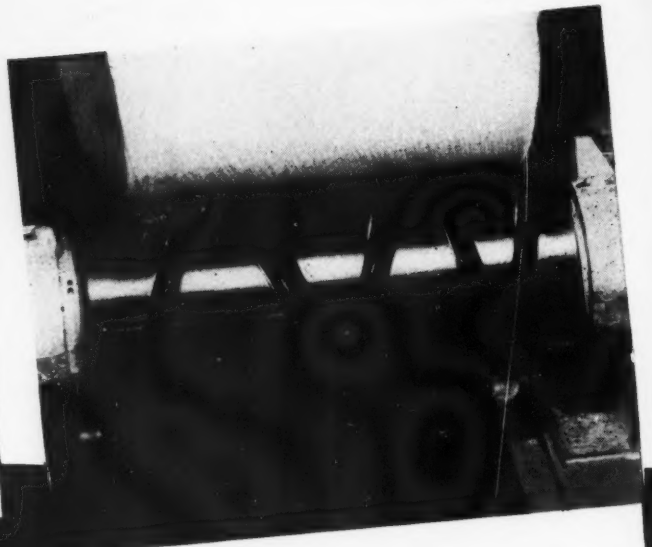
Universal Winding Company

PROVIDENCE BOSTON UTICA PHILADELPHIA
CHARLOTTE ATLANTA

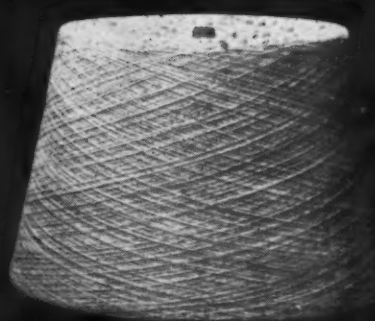
*Reg. U. S. Pat. Off.



Roto-Cone features appreciated by knitters include (1) shallow, crush-resistant nose end; (2) fewer stitches due to quick traverse reversal; (3) accelerated taper for free yarn delivery; (4) steep-angle wind for better delivery; (5) freedom from roll cuts and chafed yarn. They also like the uniformity of Roto-Cones—always produced under standard conditions, with the same Rotary Traverse, with uniform settings.



Nothing could be more simple than the Rotary Traverse—which guides the yarn while it drives the package. Made of plastic for cotton yarns, of cast-iron for spun rayon and other yarns, it eliminates cams, guides and other parts which limit winding speed, which wear fast, and introduce the chance of inequalities in winding from spindle to spindle.



ROTO-CONER* LEESONA REG. U. S. PAT. OFF.

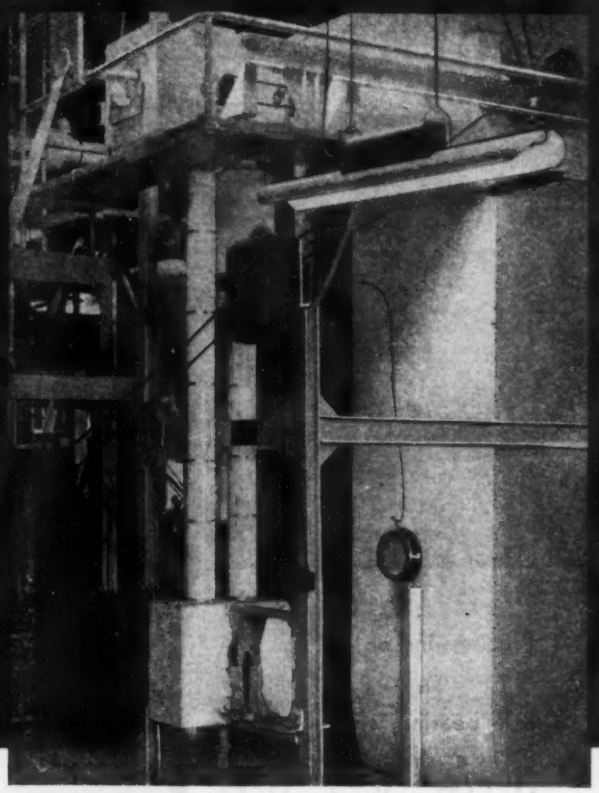
Open-Wind Cones for Knitting

WARPING CONES · DYEING PACKAGES · PARALLEL TUBES FOR TWISTING

DUPONT *CONTINUOUS* PEROXIDE BLEACH

HIGH SPEED PROCESS

GOOD WHITE GROUNDS



GOOD WHITE GROUNDS . . . maximum protection for the dyes. There, in a nutshell, is the big problem in bleaching colored yarn shirtings.

For this production job, Du Pont recommends Continuous Peroxide Bleaching. Developed through research, it is an important contribution to the textile industry. Reports from leading mills using the new process offer ample evidence that it is entirely practical.

The chief advantage of the process is the fact that it cuts bleaching time from an eight- or fourteen-hour job to a two-hour operation. What's more, it allows a *continuous* flow of material that can be geared to your production line.

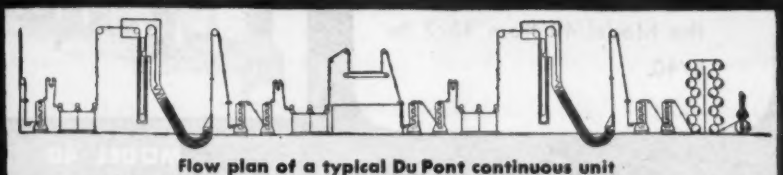
Flexibility is a feature of the Du Pont Continuous Process—to switch from fabric to fabric is an easy matter. Not only that but you have complete control over the various bleaching factors. And you can produce a high-quality, uniform bleach with a minimum of seconds and rejects.

Recognized textile finishing machinery manufacturers are building the equipment following designs patented by Du Pont. Get more information about the use of peroxides in continuous bleaching by writing to E. I. du Pont de Nemours & Co. (Inc.), Electro-chemicals Department, Wilmington 98, Delaware.

✓ THESE FEATURES

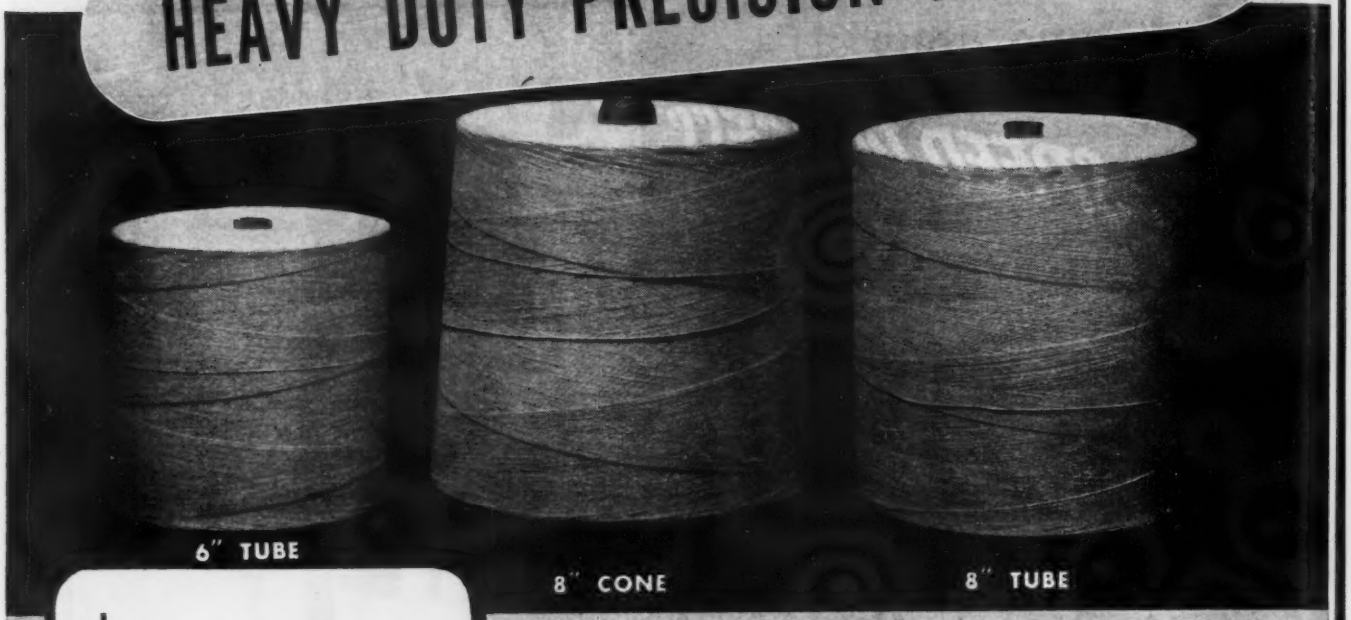
TWO-HOUR BLEACH **HIGH QUALITY**
ECONOMICAL **UNIFORM BLEACH**
FLEXIBLE **PROTECTS DYES** **CONTROLLED**
MINIMUM SECONDS AND REJECTS

DU PONT



Flow plan of a typical Du Pont continuous unit

HEAVY DUTY PRECISION WINDERS



6" TUBE

8" CONE

8" TUBE

1 Precise wind or lay.

2 Ball bearing spindles and drive shaft standard on Model 77; optional on Model 40.

3 Spindles driven by individual quarter-turn bolts.

4 Equipment for drawing either overend or unrolling.

5 Arbors for various types of cones and tubes furnished for both machines.

6 Traverses on Model 77 up to 8"—on Model 40 up to 6½".

7 Multiple end winding of braider tubes on the Model 40.

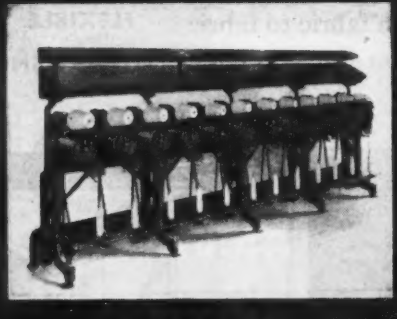
8 The Model 77 winds a range of counts from 8/3 to 8/100; the Model 40 from 30/2 to 8/40.

THAT CAN *"Take It" and "Dish It Out"!*

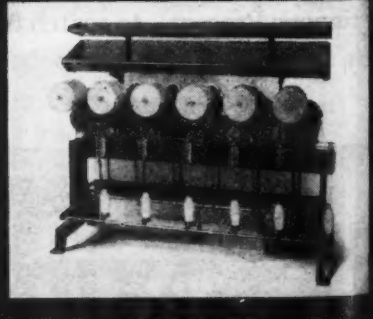
Today's requirements include a far greater poundage of coarse yarns and plies. Mills everywhere handling these yarns must be equipped with winders that can "take it" AND simultaneously "dish out" the production.

The Foster Model 40 and Model 77 precise winders for cones and tubes have proved they can do both economically and consistently. Year in and year out they operate with a minimum of mechanical repair and maintenance.

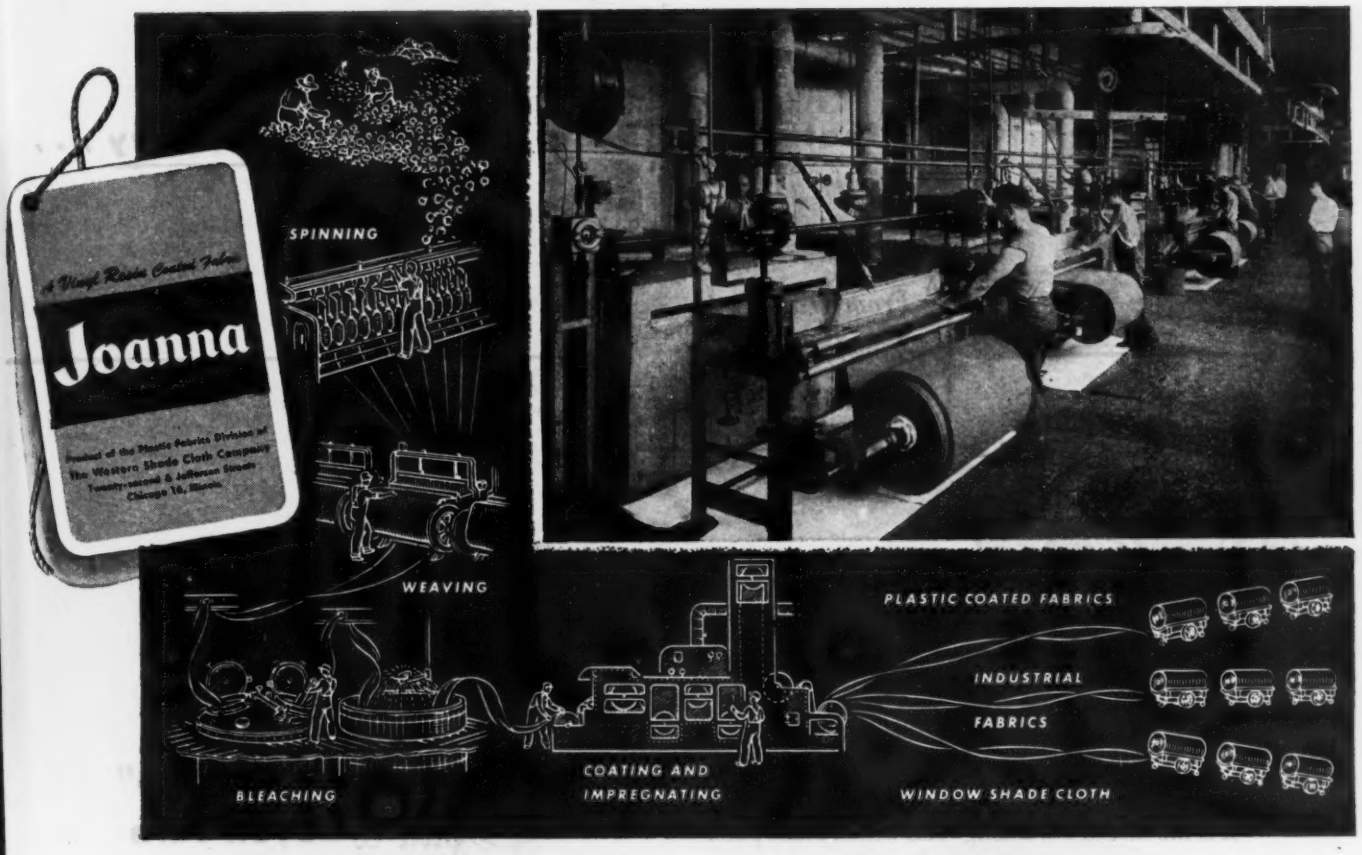
FOSTER MACHINE CO.
WESTFIELD, MASSACHUSETTS
Southern Office: Johnston Bldg. Charlotte, N. C.



MODEL 40



MODEL 77



PLASTIC COATED FABRICS may play an important part in your plans for the future

When industry again turns to peace time pursuits there will be a heavy demand for many kinds of fabrics "*multi-proofed*" *with plastics.*

Vinyl resin coatings are here to stay. Called upon, after Pearl Harbor, to pinch-hit for scarce, conventional fabric proofing materials, they have performed superbly under most difficult conditions. For hundreds of applications they have permanently replaced the protective materials for which they were substituted.

Coating fabrics with plastics is nothing new to our organization. Long before Pearl Harbor, it was an accomplished fact. With a background of nearly half a century of fabric coating experience we were among the first to master the difficult technique of applying plastic coatings to cottons, silks, rayons, nylons, ducks, burlaps and paper.

Chances are that somewhere in your post-war operations you will use to good advantage some type of fabric coated or impregnated with protective plastics.

You, for instance, may be a manufacturer of items for consumer sale such as luggage, furniture, books, rain wear, shoes, shower curtains, garment bags, baby carriages, mattresses — or —you may be a manufacturer of heavy goods such as railway coaches, airplanes, automobiles, trucks, refrigerators, etc. If yours is a fabric problem, we believe we can supply the answer.

Our research and manufacturing facilities are now devoted largely to the production of fabrics for our armed forces and essential civilian uses. When production can be safely diverted from these essential requirements, our entire facilities will again be at your service.

Joanna
Coated Fabrics

PLASTIC FABRICS DIVISION

The Western Shade Cloth Company, 22nd & Jefferson Streets, Chicago 16

Plastic Fabrics Division: VINYL RESIN, PYROXYLIN AND OTHER PLASTIC COATINGS • PROOFED FABRICS AND PAPERS • SIMULATED LEATHERS
Industrial Fabrics Division: RUBBER HOLLANDS • VARNISHED SEPARATOR CLOTH • BOOK CLOTHS • AND OTHER SPECIALIZED FABRICS
Window Shade Division: WINDOW SHADE CLOTH, ROLLERS AND ACCESSORIES • CLOTH AND PAPER WINDOW SHADES

JOANNA TEXTILE MILLS, GOLDVILLE, SOUTH CAROLINA

The greatness of Duse lay in her versatility . . .

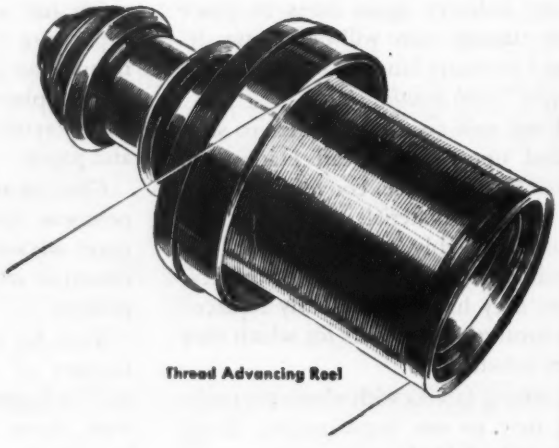
From tragedy to comedy and miraculous in either.

The greatness of INDUSTRIAL'S "Continuous Process" *Spun-lo Rayon Yarn lies in its versatility, too.

It is the thread advancing reels which make possible Industrial's amazing "Continuous Process" for producing *Spun-lo rayon yarn, and which give it its remarkable versatility.

Equally at home with yarn of deniers heavy enough for tire cord, or fine enough for cobweb fabric, the extreme uniformity of the yarn, cone by cone, lot by lot, and the absence of knots and broken filaments, are characteristics of the *Spun-lo "Continuous Process" common to every size yarn produced by it.

Of course, a very large part of our production continues to be used for vital war needs and the available yarn for textile purposes is insufficient to even partially take care of our regular customers' requirements. Still, we think it will pay you, in connection with your postwar textile planning, to get acquainted now with the possibilities and superiorities of *Spun-lo rayon yarn produced by the "Continuous Process".



Thread Advancing Reel

*Reg. U. S. Pat. Off.

Industrial RAYON CORPORATION
MAKERS OF *Spun-lo RAYON YARN BY THE Continuous Process

CLEVELAND, OHIO • NEW YORK OFFICE, 500 FIFTH AVENUE

By Ordering DECERESOL* OT

THE SPEEDIEST WETTING AGENT AVAILABLE FOR TEXTILE PROCESSING

DECERESOL* OT is shipped to you in liquid form for convenience in handling and for instantaneous addition to the wet processing bath without preliminary make-up or manipulation. You are assured of speed in application, saving in time and labor.

The remarkable wetting, penetrating, dispersing, and dye leveling properties of DECERESOL OT also mean speed in processing and better results. There are at least thirty different ways DECERESOL OT will save you time, cut costs, and improve production.

Write to Cyanamid for complete information or ask our representative to assist you in using DECERESOL Wetting Agents for dyeing all types of fibers.

• • •

DECERESOL OT *is shipped in standard 55-gallon stainless steel drums having an exact net weight of 450 pounds, or in 12-gallon boxed carboys with an exact net weight of 100 pounds.*

AMERICAN CYANAMID
& CHEMICAL CORPORATION
(A Unit of American Cyanamid Company)
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

MANUFACTURERS OF
SULPHONATED OILS • PENETRANTS • SOFTENERS
FINISHES • SIZING COMPOUNDS • DECERESOL* OT
WETTING AGENTS AND OTHER SPECIALTIES FOR THE TEXTILE INDUSTRY.

*Reg. U. S. Pat. Off.

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. OCTOBER, 1944

NEW FABRIC EFFECTS OBTAINED WITH 1.0-DENIER RAYON STAPLE

As a result of the new 1.0 denier rayon staple recently developed by the American Viscose Corporation, many new types of fine textured spun rayons are about to be introduced. These fabrics will enter fields of use previously considered inaccessible to rayon.

Working with this super-fine, extra-strength Avisco, one leading gray goods organization is beginning to produce a plain weave fabric of fine yarn and fine count. Samples of the finished fabric show the cloth to be a distinctive one, with a luxurious handle and a good drape, that dyes and prints beautifully. Initial use for these cloths will be in the dress and blouse fields. Other cloths are being produced for men's wear use, such as daytime dress shirts.

A rayon staple spinner is making sale yarn for limited distribution. A desirable use for one type yarn is glove fabrics knit on Simplex machines. Another yarn is being produced for foundation garment fabrics.

Interesting experiments are under way to make fine types of worsted-type dress fabrics from this fiber blended with 70s Australian wool.

Because of the finer denier, the cloth has more absorbency . . . is therefore valuable for use in men's shirts, both underwear and regular, and in handkerchiefs.

It is expected that several fabric firms will soon be ready to introduce new lines spun of this staple. However, the amount of fabric that will be available in the market is temporarily restricted by the limited availability of rayon staple.

AVC Presents Southern Pine Story

In a recent advertisement, the American Viscose Corporation calls attention to southern slash pine. The advertisement tells how this natural growth has become a new source for high alpha cellulose suitable for rayon production. It also comments on the effect a new use for southern pine may have on the economy of the South. It is one of a series currently appearing in such publications as "Time," "Business Week" and "New Yorker."

"FORBES" COMMENDS AVC FORMULA FOR EMPLOYEE MORALE

A recent article in "Forbes" Magazine discusses the methods used by the American Viscose Corporation to build morale among its workers. The article points to the self-participation of employees as the outstanding element in the success of this effort.

One of the major drives was to impress the employees with a knowledge of how vital their work was to the war effort. To dramatize rayon's many important military uses a large diorama, showing an American attack on a Jap-held island, was built by employees. The diorama was animated with gun flashes, bomb explosions and sound effects. Interest in this exhibit led to the popular "Family Night Shows," which in turn inspired stage shows put on by talented employees. Visitors to the shows were conducted through the plant, so that they might see the work done by their husbands, brothers, sisters and sons in the making of rayon.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN" TESTED
Helps provide scientific selling facts.

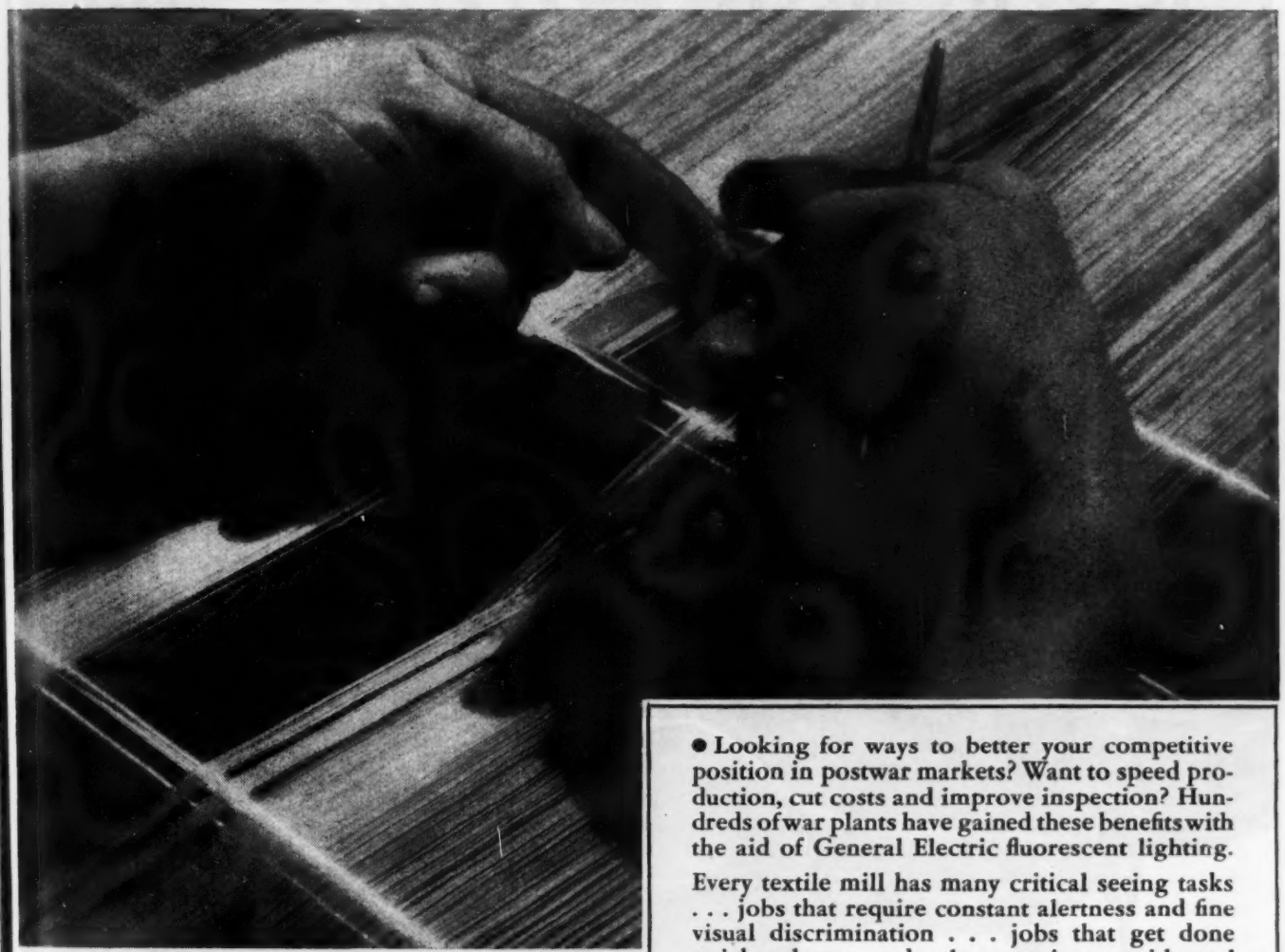
AMERICAN VISCOSE CORPORATION
Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off.

HOW TO GUARD PEACETIME PROFITS
with G-E Fluorescent Lighting



Long lines of G-E fluorescent lighting provide an even spread of light throughout the room. Breaks in fine thread can be detected instantly and supervision brought to new levels of efficiency.

● Looking for ways to better your competitive position in postwar markets? Want to speed production, cut costs and improve inspection? Hundreds of war plants have gained these benefits with the aid of General Electric fluorescent lighting.

Every textile mill has many critical seeing tasks . . . jobs that require constant alertness and fine visual discrimination . . . jobs that get done quicker, better, and at lower unit cost with cool indoor "daylight" from G-E Fluorescent Lamps.

You'll find it pays to make fluorescent lighting with G-E Mazda F lamps an integral part of your postwar planning. General Electric engineers with years of experience in textile lighting problems will be glad to advise you. Just call or write your nearest G-E Lamp office.

"TO MAKE G-E LAMPS STAY BRIGHTER LONGER"
The Constant Aim of G-E LAMP RESEARCH

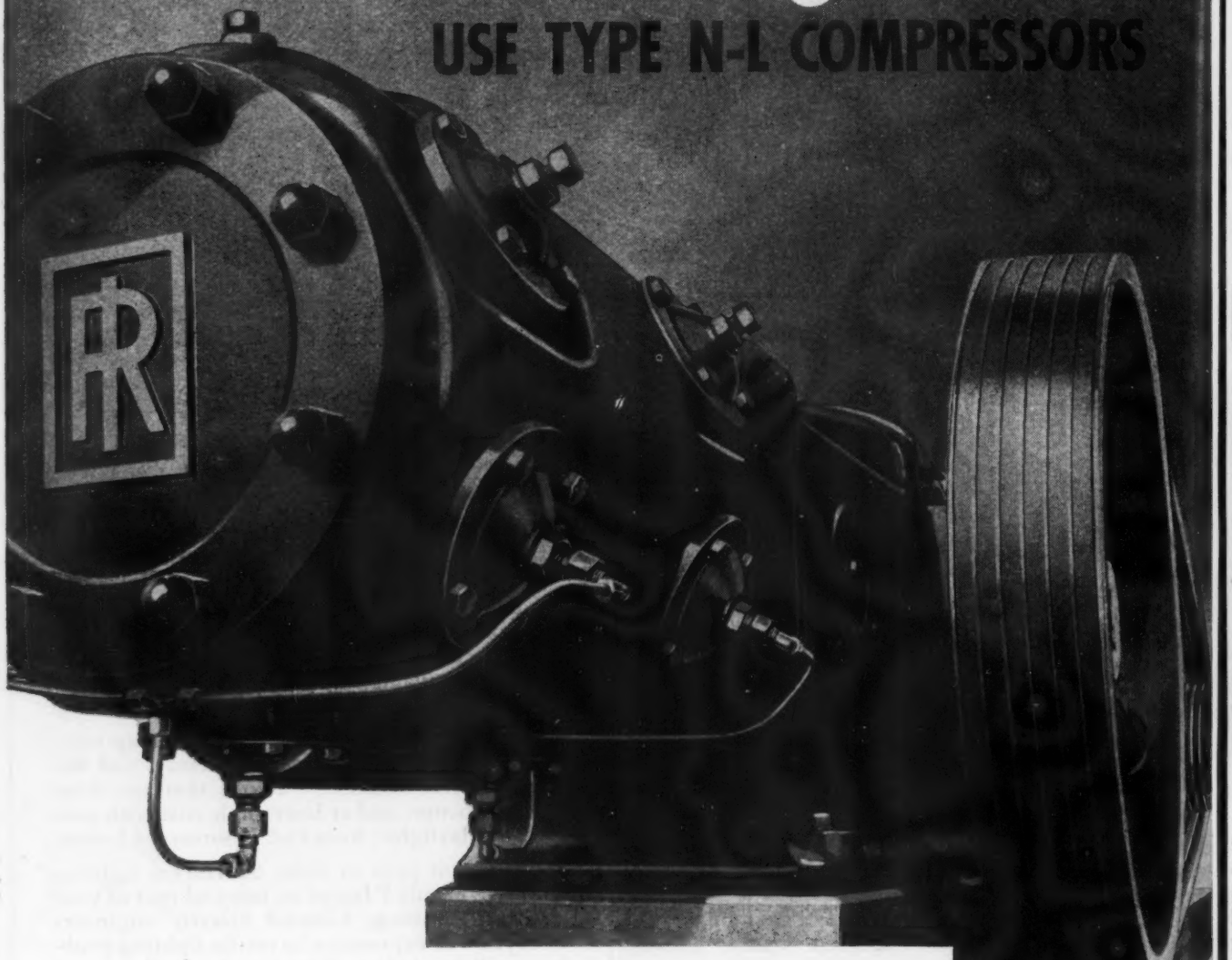
KEEP BUYING WAR BONDS—KEEP THE WAR BONDS YOU BUY

G-E MAZDA LAMPS
GENERAL ELECTRIC

Hear the General Electric radio programs: "The G-E All-Girl Orchestra," Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

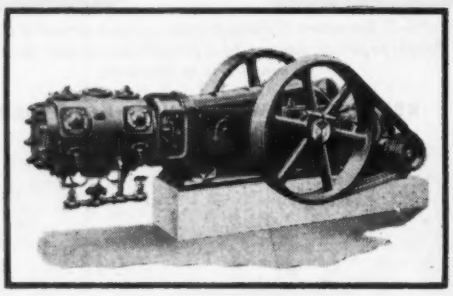
IF YOU NEED *Oil-free* AIR

USE TYPE N-L COMPRESSORS



Type N-L (non-lubricated) compressor cylinders are designed to operate without any oil, glycerine, water or other lubricant . . . because they use a special piston fitted with graphitic-carbon wearing rings and piston rings.

If oil in compressed air is one of your problems, talk it over with our field engineer. He can tell you how Ingersoll-Rand compressors with N-L cylinders are solving the air problem in food and process industries, and in instrument-control systems which require oil-free air. Compressors fitted with N-L cylinders range from 5 to 300 horsepower . . . for pressures up to 125 lb per sq inch . . . all built for heavy-duty service.



Ingersoll-Rand

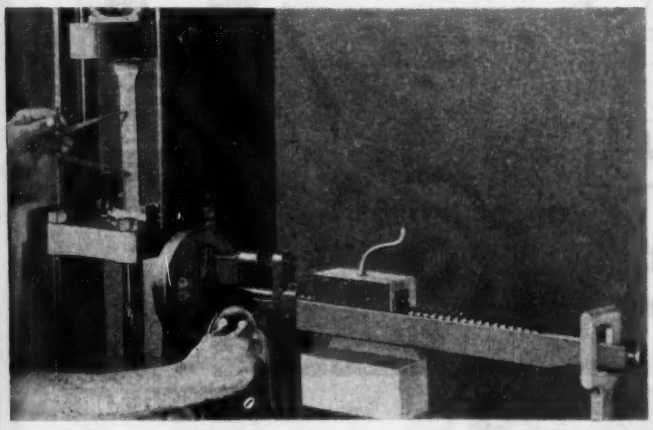
11 BROADWAY, NEW YORK 4, N. Y.

1-418

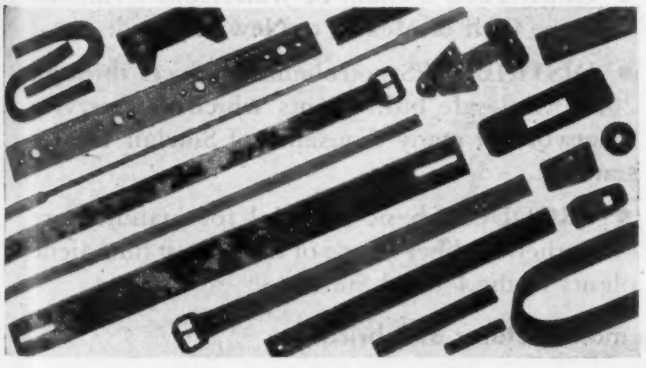
COMPRESSORS • TURBO BLOWERS • ROCK DRILLS • AIR TOOLS • OIL AND GAS ENGINES • CONDENSERS • CENTRIFUGAL PUMPS

This unique design of check strap is a Graton & Knight development which, together with the superior service provided by "Hairitan" leather, has resulted in such performance records as: 8 months and better average life in a group of Southern mills, all running two shifts.

IF IT'S ORANGE...IT GIVES YOU LONGER LIFE



Orange color identifies the ORANGE LINE of loom leathers made from exclusive "Hairitan" leather — acknowledged the equal of any "European-type" hair-on tannage. "Hairitan" check straps average 6500 lbs. tensile strength on the Olsen Machine shown above . . . weigh less (giving more to the pound) . . . have extremely little permanent stretch . . . and have a resiliency especially developed for the particular service.



All these ORANGE LINE loom leathers have this important advantage — they are tanned *and* finished under one roof, under one control of quality. Moreover, since Graton & Knight makes many industrial leather products, it can select hides according to strict, individual specifications. Each finished product is the result of manufacturing steps all controlled by these specifications.

THE ORANGE LINE

One Quality Control from Hide to Loom

PICKMASTER PICKERS with the famous "Life Saver" hole . . . BLOCK PICKERS extra-resilient, cemented under pressure . . . "TWO-FOLD" CHECK STRAPS straight or endless . . . JACK & FLAT HARNESS STRAPS for heavy duty work . . . ROUND HARNESS & DOBBY STRAPS center-stock "Hairitan" . . . LUG STRAPS 4 or 5 ply, folded, stitched; 2 or 3 ply, cemented . . . LUG HOLD-UP STRAPS . . . BUMPER OR SPINDLE STRAPS 1 or 2 ply.

All "Hairitan" products are identified by orange color on the flesh side.

Graton & Knight also manufacture oak-tanned pickers, lug straps, bunters, box plate and binder leathers . . . "Research" rub roll aprons . . . G & K condenser tapes . . . G & K comber and gill box aprons . . . "Research" leather belting.

Make sure you are getting the best results from every one of your leather loom products. Send for valuable catalog on G&K leather products for textile mill uses. Also ask to receive, regularly, informative literature on loom leathers. Address 326 Franklin Street, Graton & Knight Company, Worcester 4, Mass.

GRATON AND KNIGHT

ORANGE LINE LOOM LEATHERS

Supplied by the leading distributors to the textile industry . . . look under Graton & Knight in "Belting" section of Classified Telephone Directory or THOMAS' REGISTER. See complete catalog in TEXTILE WORLD YEAR BOOK.

SERVING THE

Petroleum Needs of the Nation

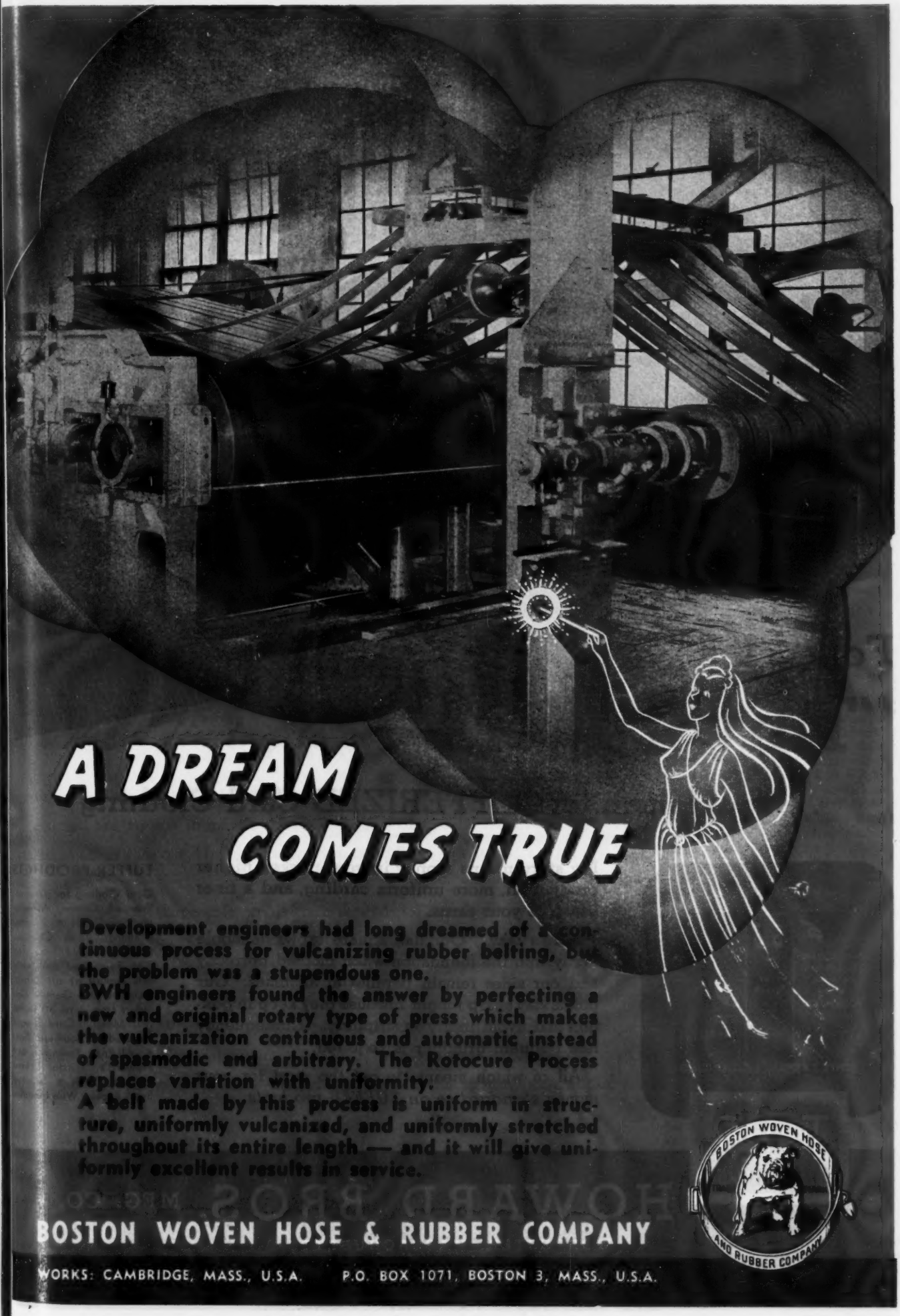
Typical Sinclair Refinery, Transportation and Distribution Units.

- SINCLAIR produces oil from more than 8000 wells located in the United States and Venezuela.
- MANUFACTURES all types of petroleum products in 10 modern refineries processing 90,000,000 barrels of crude oil annually.
- TRANSPORTS 300,000 barrels of crude oil and finished products daily through 14,000 miles of pipe lines; also employs thousands of tank cars and a large fleet of ocean tank ships.
- OPERATES a chain of waterfront terminals from the Gulf of Mexico to New England.
- DISTRIBUTES petroleum products through 2000 wholesale bulk plants which also service a network of many thousands of Sinclair Dealer stations.
- PRODUCES basic material for manufacture of synthetic rubber in one of the largest butadiene plants in the United States.

Sinclair is America's outstanding manufacturer of lubricants.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.



A DREAM COMES TRUE

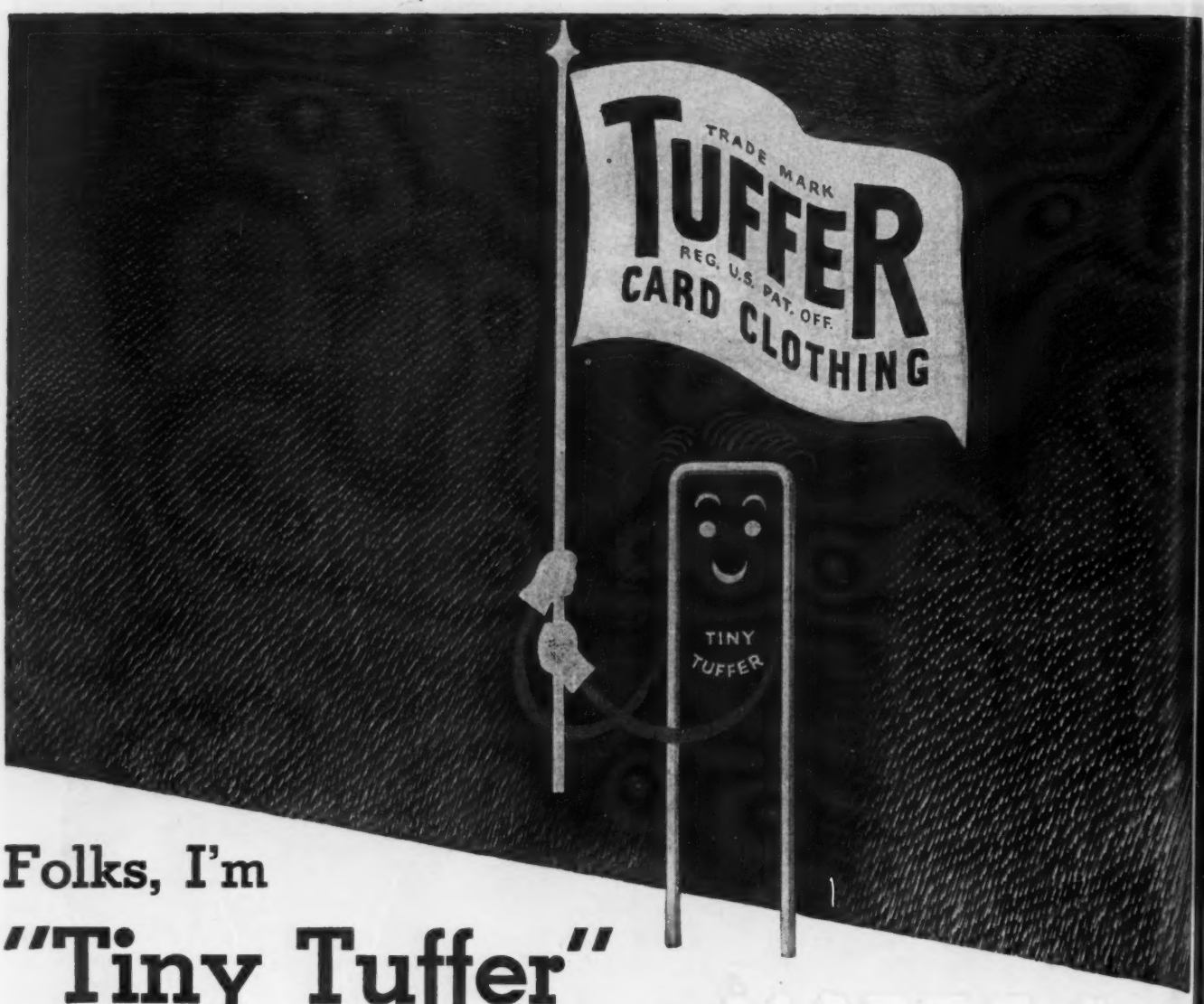
Development engineers had long dreamed of a continuous process for vulcanizing rubber belting, but the problem was a stupendous one.

BWH engineers found the answer by perfecting a new and original rotary type of press which makes the vulcanization continuous and automatic instead of spasmodic and arbitrary. The Rotocure Process replaces variation with uniformity.

A belt made by this process is uniform in structure, uniformly vulcanized, and uniformly stretched throughout its entire length — and it will give uniformly excellent results in service.

BOSTON WOVEN HOSE & RUBBER COMPANY

WORKS: CAMBRIDGE, MASS., U.S.A. P.O. BOX 1071, BOSTON 3, MASS., U.S.A.



Folks, I'm "Tiny Tuffer"

. . . spokesman for TUFFERIZED Card Clothing

My story means money in your pocket, higher production, more uniform carding, and a finer finish to your yarns.

Here's why. Our flat, square crowns snuggle firmly into the foundation when clothed correctly and our sides remain parallel at all times. Our points stay sharp longer because they keep in position and avoid injury in stripping. Consequently less frequent grinding is required.

All of which means, to get the most for your money *standardize on TUFFER products.*

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga. Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas **Canadian Agents:** Calwool Accessories, Ltd., Toronto 2

When Timing is of the Essence

Soon the great bombers will take off on another history-making raid. The briefing session has charted the mission in minute detail—each crew knows its exact task. Eyes on watch, an officer calls out, "In 15 seconds it will be 4:08 . . . 10 seconds . . . 5, 4, 3, 2, 1, check—4:08."

The success of a large-scale aerial attack depends on a multiplicity of supporting factors, including supplies, data on the target area, weather, flight courses, altitude and approach of the bombing run. And timing.

Similarly, the timing of production schedules is all-important in successful manufacturing operations. When raw materials meet specifications one source of costly delays is avoided. Columbia's reliability in this respect helps maintain production . . . an important reason why Columbia is the preferred supplier for so many manufacturers.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING • PITTSBURGH 19, PA.

CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • NEW YORK • CINCINNATI
CLEVELAND • PHILADELPHIA • MINNEAPOLIS • CHARLOTTE

COLUMBIA SPOTLIGHT

HEXACHLORETHANE is one of the smoke-producing chemicals which our Chemical Warfare Service has used to such great advantage on every front. Screening our operations from observation has reduced enemy effectiveness and kept down our casualties. As indicated by the name, chlorine is one of the ingredients of hexachlorethane, and Columbia is one of the principal producers of chlorine required for this purpose.

ALLYMER—Columbia's recently announced thermosetting plastic—is truly a "contact-pressure" resin. In making laminated products, only enough pressure is used to keep plies in contact with the mold. The relative simplicity of the tooling necessary when Allymer is used and the large complicated sections which can be made greatly extend the application possibilities for laminated parts. Research reports and other data are available on request.

HOMEMAKERS, who have despaired of the ugly black marks left on floors by rubber-shod members of their families, can now eliminate this nuisance by insisting that "no-mark" soles and heels be obtained. Those two remarkable Columbia pigments, Calcene T and Silene EF, are being used with GR:S to make a highly satisfactory no-mark sole and heel stock. Primarily developed for the rubber industry, new uses for these pigments are being uncovered in numerous other fields. Write for information.

THOUGH THOUSANDS think of "bicarb" only for the relief it brings to certain stomach maladies, Sodium Bicarbonate serves in scores of other important uses in a variety of industries. To name but a few—in the baking and milling field, particularly as an ingredient of baking powders and self-rising flours . . . in the leather industry, as a neutralizer in tanning operations . . . in textile manufacturing, for the prevention of timber mold. Columbia manufactures three grades of Sodium Bicarbonate in various granulations to meet the specific needs of customers in every field.

COLUMBIA CHEMICALS include Soda Ash, Caustic Soda, Sodium Bicarbonate, Liquid Chlorine, Silene EF (Hydrated Calcium Silicate) Calcium Chloride, Soda Briquettes, Modified Sodas, Caustic Ash, Phosflake, Calcene T (Precipitated Calcium Carbonate) and Calcium Hypochlorite.

NO CALENDER CAN BE BETTER THAN THE ROLLS IN IT

B. F. PERKINS & SON, Inc.

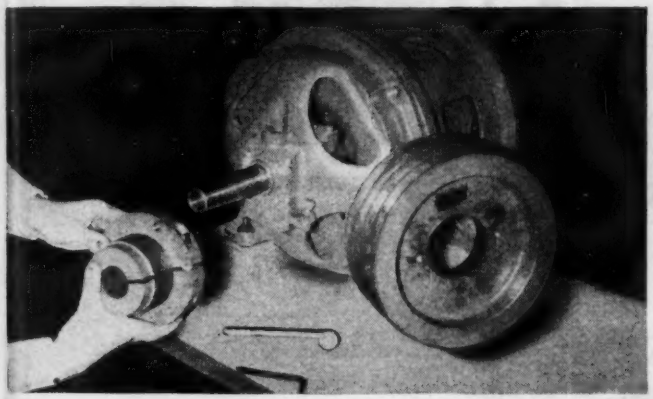
ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

THE LARGEST MANUFACTURERS OF ROLLS IN THE WORLD

DO YOU HAVE THESE 3 FEATURES IN YOUR PRESENT SHEAVES?

If so, they must be WORTHINGTON'S QDs



1. EASY TO GET ON

2. EASY TO GET OFF

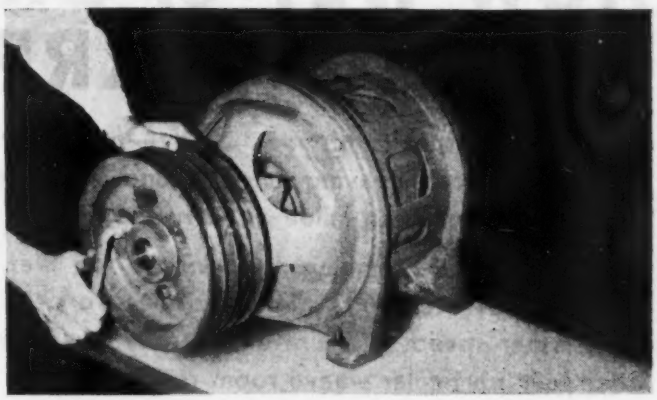
Are you losing time with old-fashioned sheaves? You may be, if you haven't got the QD's time-saving *three* features.

1. Split hub — with taper cone surface for mounting taper bored rim — makes *installation easy*.

2. Pull-up screws usable as jack bolts break Taper Friction Fit, quickly free shaft for bearing maintenance, speed changes, or *quick removal* and mounting of different diameter rims . . . without disturbing the hub. No alignment problems.

3. Bigger pull-up bolts for higher taper cone pressure insure positive clamp grip, keep sheave *always tight on the shaft*.

The sheave with these 3 features, teamed up with Worthington Goodyear Endless Cord V-Belts will give you more for your money. Stock size sheaves and belts at strategic centers from coast to coast.



3. YET ALWAYS TIGHT ON THE SHAFT

Reading Time: 3 Minutes — To Get Accurate Belt Ratings

From the 72-page Master Manual, containing original engineering data . . . sectionalized, loose-leaf, tabbed for ready reference . . . you can select in three minutes the right Worthington V-Belt drive. You get accurate belt ratings . . . avoiding *over*-belting and *under*-belting. Send the coupon today for your free copy! Specification and installation record sheets included.

Centrifugal, Rotary, Steam & Power Pumps | Vertical & Horizontal Compressors | Liquid Meters | Variable Speed Drives | Multi-V-Drives

WORTHINGTON *BEHIND THE NAME* WORTHINGTON

Standard Products Division
Worthington Pump and Machinery Corporation
Harrison, N. J.

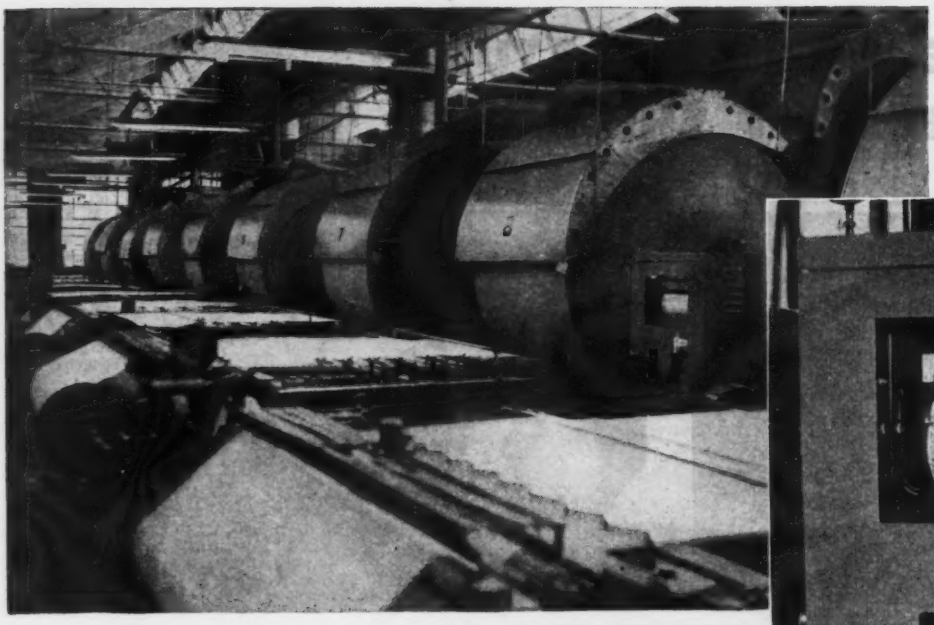
Standard Products Division
Worthington Pump and Machinery Corporation
Harrison, N. J.

Please send me a copy of the Worthington Master Manual.

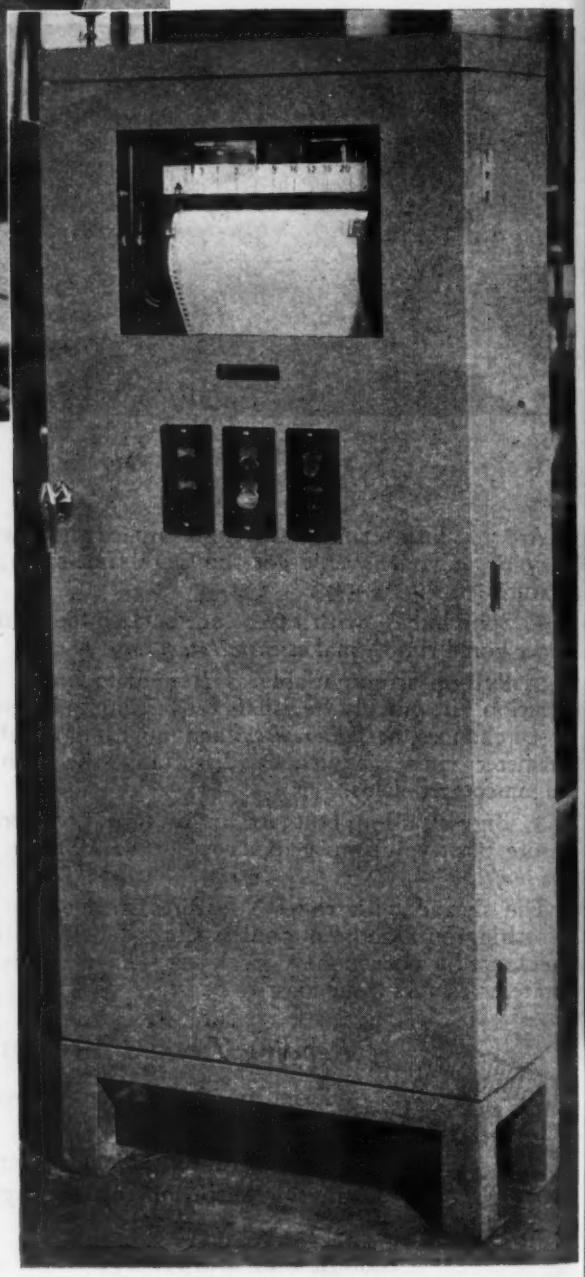
Name .....

Company .....

Address .....



Slashers at West Point Mfg. Company, West Point, Ga., are controlled by The Brown Moist-o-graph System.



HOW WET or DRY IS YOUR WARP?

Guessing moisture content is costly—*baked or dry warps* mean poor weaving, chafing, and excessive fly. Over-wet warps mean mildew and rust stains.

Where warps are running too dry or too wet, the Brown MOIST-o-GRAPH eliminates guesswork. It controls slasher speed to insure a uniformly level warp to meet your particular weave room requirements.

It measures, records and controls the exact moisture content, thereby giving you a better weaving warp which will increase weave room production.

Further, by maintaining the correct moisture content, the Brown MOIST-o-GRAPH Controller permits lower humidity in the weave room.

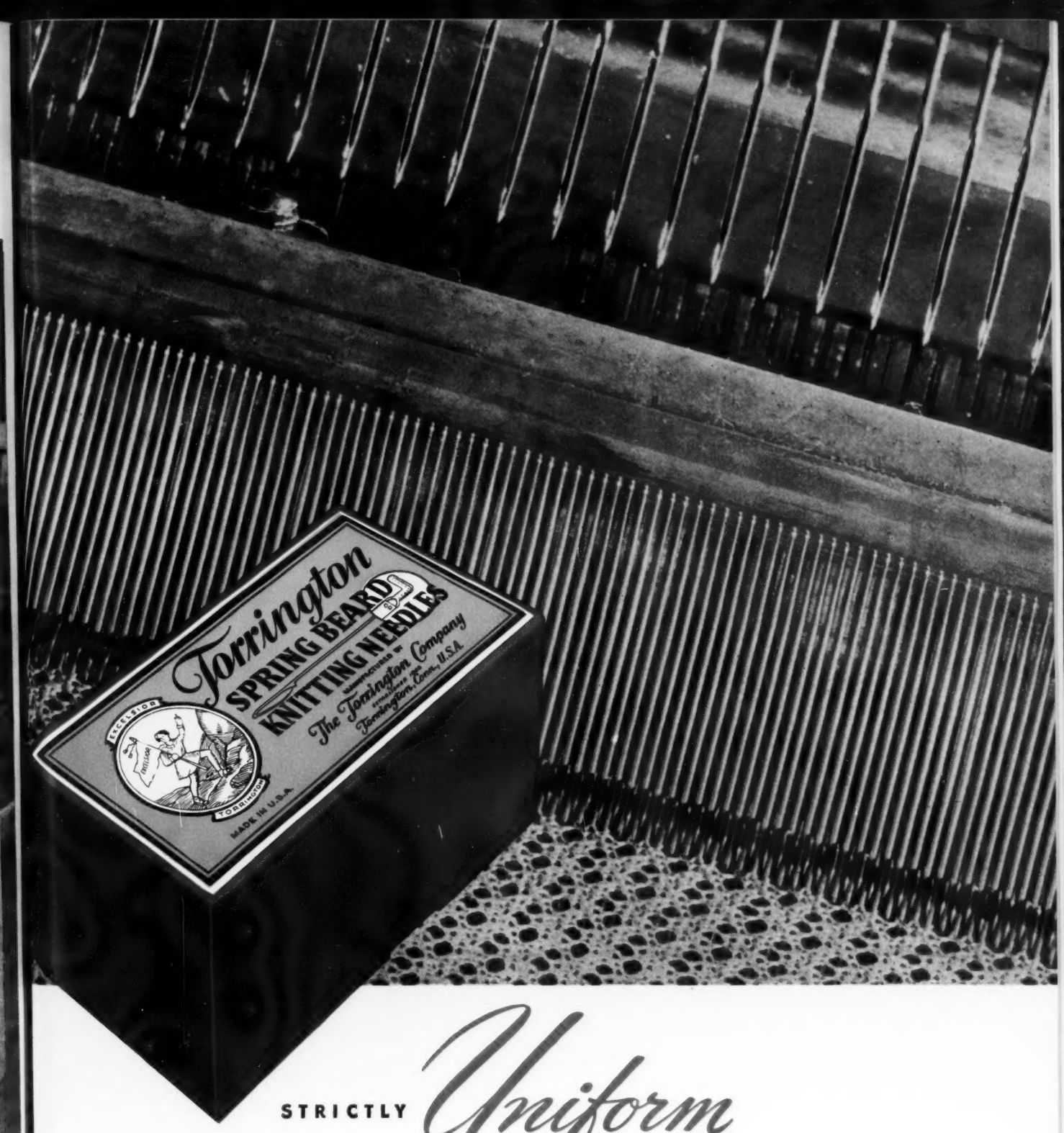
The Brown MOIST-o-GRAPH maintains the correct slasher speed, and makes a continuous and permanent chart record of moisture content within one-half of one percent. Ranges for cotton are 4% to 12% and for rayon 1% to 20%.

Users of Brown MOIST-o-GRAPH control systems have increased slasher speeds as much as 40%, and have noticeably increased weave room production. You can do likewise!

Write The Brown Instrument Company, a division of Minneapolis-Honeywell Regulator Company, 4509 Wayne Avenue, Philadelphia 44, Pennsylvania. Offices in all principal cities. 119 Peter Street, Toronto, Canada—Wadsworth Road, Perivale, Middlesex, England—Nybrokajen 7, Stockholm, Sweden.

BROWN MOIST-O-GRAPH

To Measure and Control is to Economize

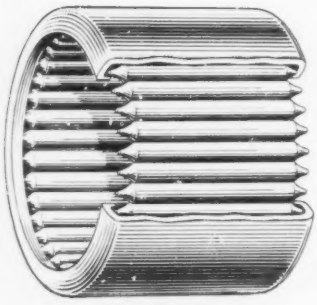


STRICTLY *Uniform*

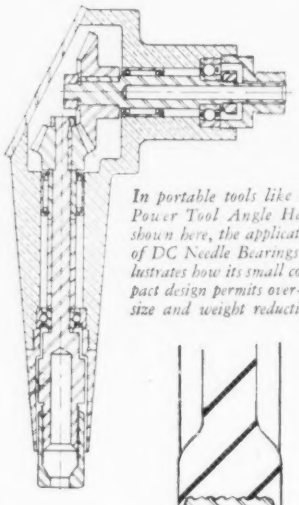
It is no coincidence that mills noted for their strict adherence to high knitting standards are regular users of Torrington Needles. And the machine-controlled uniformity of Torrington is one of the reasons why their products retain their high quality in spite of shortages of manpower and materials. To safeguard your reputation for good knitting and to keep your machines operating efficiently, insist on the machine-made needles in the famous red and green box.

Torrington SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

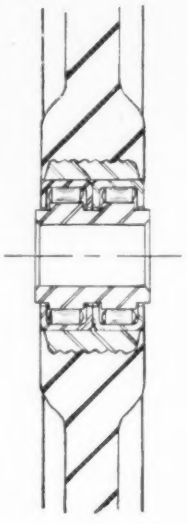
To Reduce Weight Use Needle Bearings



TYPE DC



In portable tools like the Power Tool Angle Head shown here, the application of DC Needle Bearings illustrates how its small compact design permits over-all size and weight reduction.



Full advantages of anti-friction operation with resultant weight savings in aircraft pulleys is obtained through Needle Bearings. X-section shows the double row PN Type.

TYPE PN (Double Row)

HIGH CAPACITY IN SMALL SPACE MAKES LIGHT WEIGHT NEEDLE BEARINGS IDEAL ANTI-FRICTION UNITS FOR MANY APPLICATIONS

•

In applications where weight and space are at a premium, the use of Needle Bearings has been widely adopted as the ideal solution to many design problems. For the Needle Bearing's full complement of small diameter rollers held within a compact retaining raceway provides a unit which is extremely *light* in relation to its high load capacity. Furthermore, the small over-all size of the Needle Bearing enables the design engineer to reduce size and weight of the bearing housing and frequently of other component parts as well—without sacrifice of strength, efficiency, or performance.

Ample testimony to the weight saving as well as other important features of Torrington Needle Bearings is found in the widespread use of many types in the aircraft industry. For example, in a single fighter plane, the Republic P-47 Thunderbolt, there are 53 applications of Torrington Needle Bearings all contributing weight reduction *and* improved performance!

Expressed another way—in a laminated plastic aircraft pulley equipped with the double row PN Type Needle Bearing there is weight saving which represents a net increase in the pay load.

In applications in other fields weight savings may be translated into greater operating efficiency and economy, increased sales appeal, or savings in packing and shipping costs.

In your own work toward the elimination of excess or unnecessary weight, investigate the advantages offered by Torrington Needle Bearings. The possibilities offered may surprise you. Our engineering department will gladly render every assistance in laying out applications to secure the full advantages of Needle Bearings in any design job. Or if you wish more preliminary information write for a copy of the Torrington Needle Bearing Catalog No. 30A.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Conn. • South Bend 21, Ind.

"Makers of Needle Bearings and Needle Bearing Rollers"

New York · Boston · Philadelphia
Detroit · Cleveland · Seattle
San Francisco · Chicago · Los Angeles
Toronto · London, England

LET'S GO, U.S.A. KEEP 'EM FLYING

TORRINGTON
NEEDLE BEARINGS

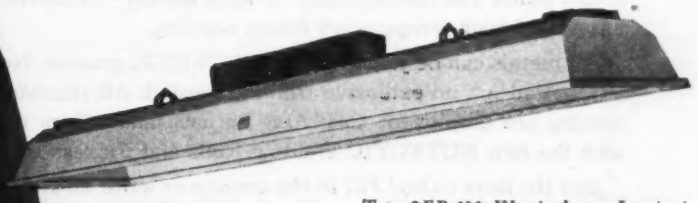
THE PLACE

THE PROBLEM

The problem: To provide glareless, shadow-free, high-level illumination to make seeing easier for weaving operations. Illumination must be adequate for quick location and repair of broken ends, to permit defects to be "picked out", and for inspection of cloth during weaving. In the manufacture of gray goods, these tasks are particularly difficult.

An average illumination of 25 footcandles was considered minimum, with 35 to 50 preferred.

THE SOLUTION



Type 2FP-100 Westinghouse Luminaire with two 100-watt white fluorescent lamps.

Solution: One unit chain-suspended over each loom at a height of 10-12 feet above the floor provides the level of illumination required. The unit consists of a steel wireway channel with all lamp-operating auxiliaries and a detachable porcelain enameled steel reflector.

For practical help on using Westinghouse Luminaires to increase efficiency in other textile mill operations, call your Westinghouse distributor today. Or write for B-3332. Westinghouse Electric & Mfg. Co., P. O. Box 868, Pittsburgh 30, Pa.

J-94645

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Lighting Equipment

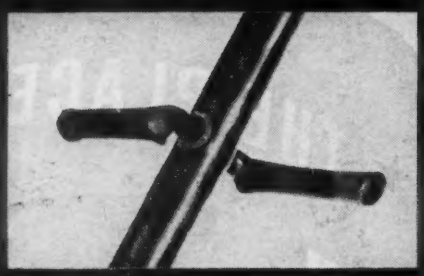
For the Textile Industry

Make 6-Ways Better Welds with EUTECTIC

(Pronounced U-TEC-TIC) Reg. U. S. Pat. Off.

Low Temperature WELDING RODS

EXTRA SMOOTHNESS is demonstrated in this Cast Iron lug built up with EutecRod 14.



UNUSUAL STRENGTH is proved by twist test of Chrome Moly steel tube welded with EutecRod 16.

PERFECT COLOR MATCH of the weld was obtained in this Bronze casting built up with EutecRod 18.

(Above) EASY MACHINING to a smooth finish is demonstrated on this Cast Iron wheel resurfaced with BRONZOCHROM rod 185.
(Below) COPPER TUBE and bronze fitting welded with EutecRod 1800 required no after machining because of smooth fillet formed.

EUTECTIC welds are: SMOOTHER • STRONGER • BETTER COLOR MATCHED • MORE MACHINABLE • FASTER TO MAKE and REQUIRE LESS HEAT, avoiding distortion, stresses and overheating

No other welding or brazing process affords welders such a combination of advantages at such low bonding temperatures (as low as 340° F) and little heat consumption.

EUTECTIC *Low Temperature* Welding, the most revolutionary welding development of modern times, enables you to weld joints at temperatures *below the fusion points of base metals*—eliminating the many hazards of high temperature fusion welding.

All metals can be joined by the EUTECTIC process. No special skill is required . . . no extensive training needed. All standard methods of heating are employed: Gas–Arc–Furnace and others in combination with the new EUTECTIC Welding Rods and Fluxes.

Get the facts today! Fill in the coupon or write on your company letterhead for full information.

See EUTECTIC demonstrated at the Metal Show, Cleveland—Booth D-306
National Chemical Exposition, Chicago—Booth 125
National Power Show, New York—Booth 312

Castolin Eutectic

EUTECTIC WELDING ALLOYS COMPANY

Originators of Eutectic *Low Temperature* Welding

40 Worth Street, New York 13, New York Room 1110 H.

Please send me full information about EUTECTIC *Low Temperature* Welding and its many great advantages.

Name_____

Company_____ Position_____

Address_____ City_____

Dayco Rub Aprons Laugh at Abrasion!

THEY'RE THE YEAR'S BIG CONTRIBUTION TO THE TEXTILE INDUSTRY!

Operators who are using Dayco Rub Aprons agree that they are downright sensational in the way they resist abrasion and in every other feature of their performance.

Just look at these advantages:—

1	They are not affected by the abrasion of constant rubbing
2	Built to withstand constant flexing
3	They will "stay put" on the condenser
4	They do not generate static
5	Not affected by humidity or temperature changes
6	Do not become slick
7	Give proper density to the yarn
8	Do not absorb pigment from dyed wool

We offer Dayco Rub Aprons as another outstanding example of Dayton Rubber's mastery over synthetic rubber in textile products. Write us for the full facts —

THE DAYTON RUBBER MFG. COMPANY

Famous Dayco Synthetic Rubber Products Since 1934

Dayton 1, Ohio Waynesville, N. C.

Main Sales Office: Woodside Bldg., Greenville, S. C.

Maintain Victory Speeds—Conserve Your Tires

Dayco Aprons by

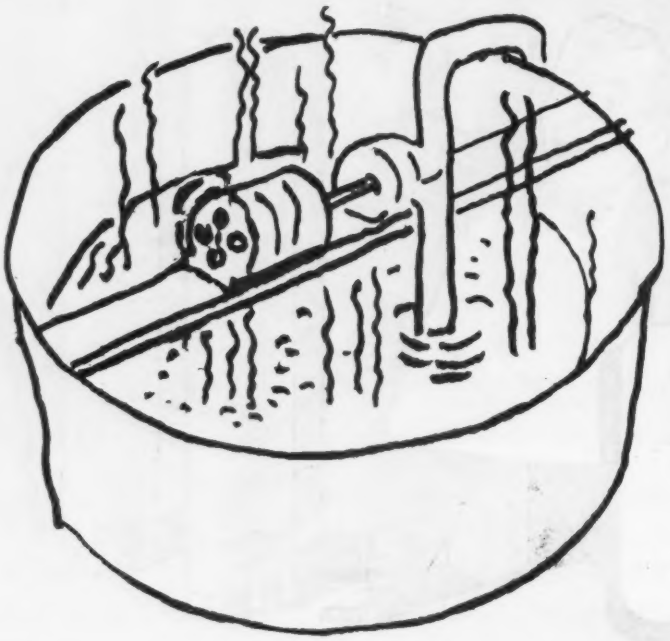
Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

A FIBERGLAS* CASE HISTORY

MOTOR NOW RUNS MONTHS IN 250° F. AMBIENT TEMPERATURE



Averaged only 2 weeks before FIBERGLAS Insulation was adopted

A nationally known die-casting company was confronted with this problem: its metal-melting tanks required motors to drive pumps located directly above the tanks. These motors were installed 18 inches above the surface of the molten metal, in an ambient temperature of about 250° F.

Motors wound with organic insulation lasted, on the average, only about two weeks before the windings failed. As a solution, these motors were rewound with Fiberglas inorganic insulation—and six months later were still giving continuous service *without a single winding failure!*

This performance is typical of Fiberglas-insulated motors—but is only one of the advantages. When properly applied and impregnated with the correct varnish, Fiberglas insulation also gives exceptional performance in conditions of severe moisture, acid and vibration.

What is Fiberglas?

Fiberglas electrical insulation is made from strong, fine glass fibers which are twisted into yarns, wound on wires, woven into tapes and cloths, braided into sleevings and formed into cords and other forms required for motor insulation. As a rule, Fiberglas insulation occupies no more space inside the motor than organic tapes, and much less space than equivalent inorganic materials. And, because Fiberglas does not deteriorate with age, it is the ideal insulation for stand-by motors—even though an organic insulation seems sufficient from an operational point of view.

Ask your motor manufacturer about Fiberglas-insulated motors. Or, if you are having motor failures, ask your repair shop to use Fiberglas on your next rewind job.

Fiberglas electrical insulations are immediately available. For complete information, consult your distributor or write *Owens-Corning Fiberglas Corporation, 1864 Nicholas Building, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.*

FIBERGLAS *ELECTRICAL INSULATIONS*

*T. M. Reg. U. S. Pat. Off.

YARNS • TAPES • CORD • SLEEVING • CLOTH AND OTHER FORMS

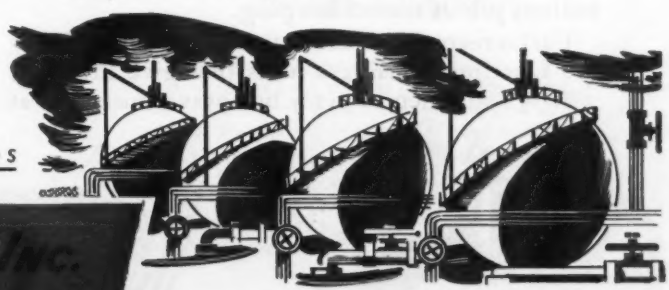
HIS PROBLEM IS ALSO YOURS...

Right now he is looking for a target for one of his deadly "tin fish." But on his watch below he probably wonders what the postwar world back home will be like . . . and what kind of place it will have for him.

That's his problem . . . and ours, too. For Industry must be ready to absorb the boys as they are mustered out of the Service.

This means planning for conversion to peacetime production . . . designing new products . . . developing better methods and processes. The WPB has encouraged such thinking . . . has even released material for experimental and development work.

TODAY is not a day too soon to start!



★ BUY MORE THAN BEFORE . . . BONDS

TRADE-MARK REG U.S. PAT. OFF.

MAGUIRE INDUSTRIES, INC.

ELECTRONICS

The modern miracles of Electronics, feverishly developed for the machines of war in the past few years, may readily prove applicable to your plans for the future. Look ahead, and go ahead with Electronics at the controls!

MAGUIRE INDUSTRIES, INC., GREENWICH • STAMFORD • BRIDGEPORT • NEW MILFORD • NEW YORK

Which One Is Forced to Waste Time?

Don't blame poor Miriam because she is always involved in a carbon mess. How would you like to wrestle with ink-smearing carbon sheets . . . stuffing them in and out, in and out?

And it is such a needless procedure, now that you can get modern, up-to-date Uarco **continuous-strip** record forms. Forms that have the carbons neatly interleaved . . . eliminate time-wasting carbon fuss and bother. You'll be surprised at what that means in time-saving efficiency. For Uarco puts an end to repetitive actions by routinizing the tedious job of record keeping.

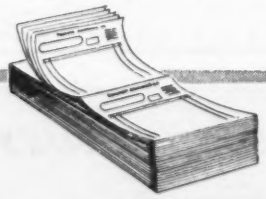
Uarco records are more than mere forms. They are functional business tools that give the how, where, and when of every business transaction at any given moment . . . keep the work moving smoothly with a minimum of trouble. Uarco records are designed either for handwritten or machine-written use. They may be carbon interleaved or non-interleaved; may be used in a Uarco Autographic Register, typewriter, billing or tabulating machine.

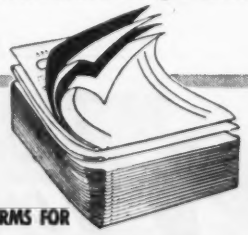
For over 50 years, Uarco has been supplying better record forms to business. We will consider it a pleasure to work with you on your individual record keeping problem. It will cost you nothing to have a Uarco representative call today.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

AUTOGRAPHIC REGISTERS

SINGLE SET FORMS





CONTINUOUS-STRIP FORMS FOR HANDWRITTEN • TYPEWRITTEN • BUSINESS MACHINE RECORDS

UARCO

BETTER BUSINESS RECORDS

TOUGH CUSTOMER

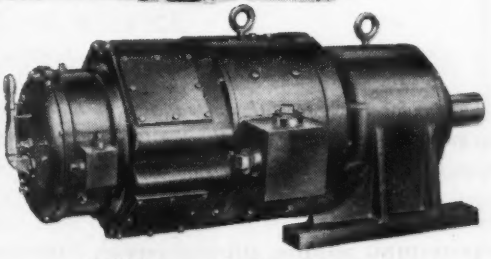
The world's toughest customer . . . that's the United States Navy. Tough in battle — equally tough in buying equipment for fighting ships and men.

Navy specifications are the strictest ever written. Navy inspectors see that every piece of equipment meets or exceeds those specifications. Navy delivery schedules must be met to the minute.

Star, with more than 30 years' experience building rugged, dependable motors for private industry began building equipment for the Navy during World War I.

Long before Pearl Harbor, Star was assigned the task of designing and building special motors and motor generators to help meet Navy needs in World War II. Tens of thousands have been delivered — all substantially ahead of Navy requirements.

Remember Star's Navy record when you need a motor or motor generator. While the Navy does not endorse any product, the fact that STAR has been a long-time Navy supplier is evidence of the high engineering skill . . . the careful craftsmanship . . . the ability to maintain on-schedule production . . . inherent in this organization. We promise you the same top-quality motors, the same faithful adherence to delivery dates, that we are now giving "the world's toughest customer". Our engineering department is ready now to discuss your motor requirements! Star Electric Motor Co., Bloomfield, N. J.



NOW . . . what's your motor problem?

This Warsaw Elevator motor that lifts and lowers tanks and trucks between top deck and tank deck of an LST is designed to meet Navy demand for compactness, power and ability to stand shocks of shell fire, bombs and mines.

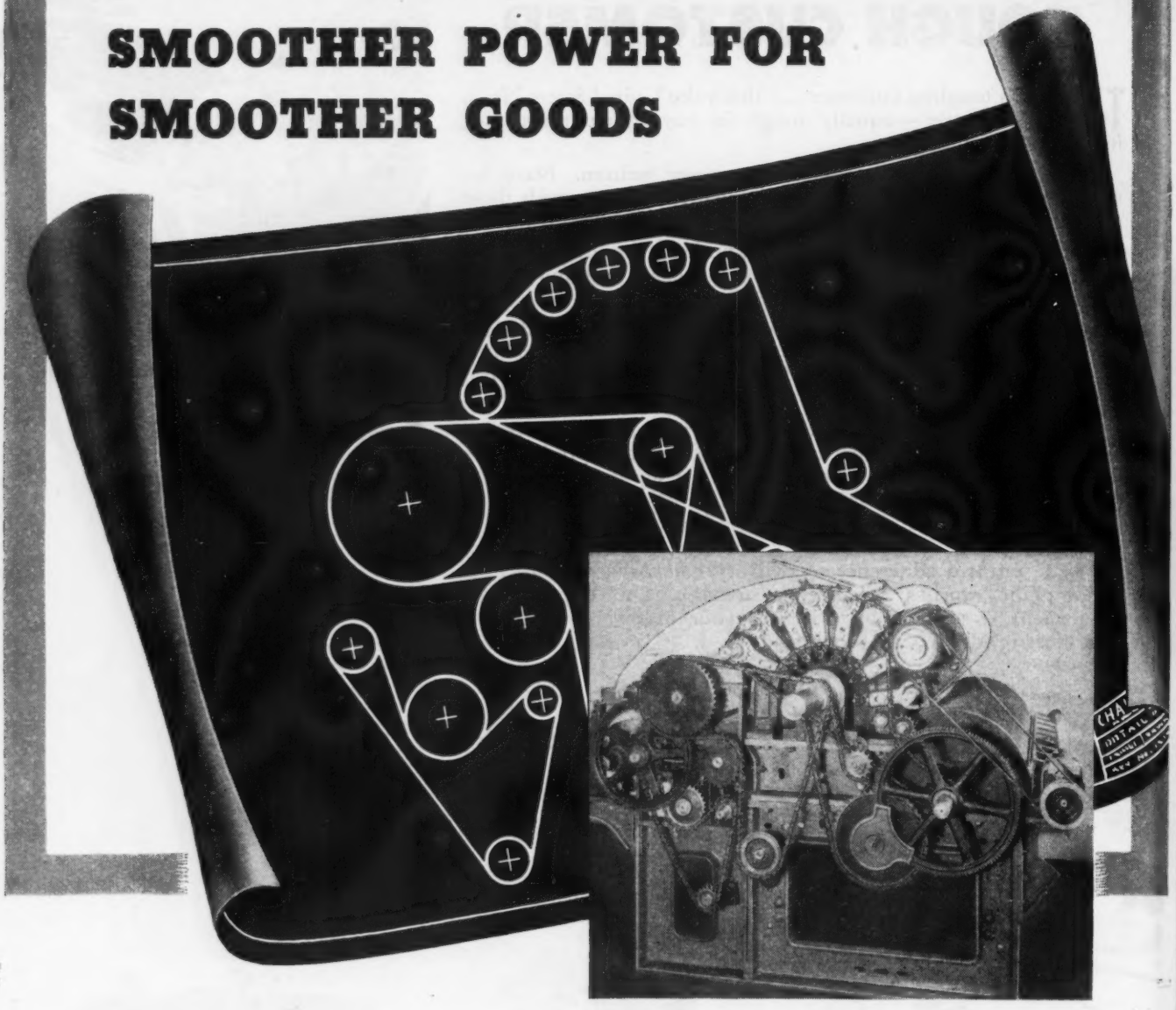
This unit is typical of Star's work for the Navy — and Star's ability to handle any post-war motor problem that may confront you. Star's standard motors — from 1/20th to 200 H.P. will probably satisfy your requirements. But when your specifications call for a "special" to fit mechanical "tight spots", you can enlist Star's know-how in motor design, plus Star's unique welding process, to great advantage.

ARMY E NAVY

STAR MOTORS

POWER PACKAGED AS YOU NEED IT

SMOOTHER POWER FOR SMOOTHER GOODS



Removing foreign material . . . cleaning and making goods smoother, this garnett is driven by smooth, jerk-free power, for Baldwin roller chain belts are accurately timing and driving the many intricate parts.

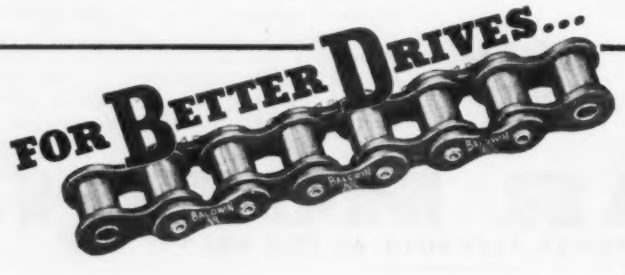
PROVIDING positive, slip-free power, Baldwin roller chain belts assure a smoother, more even product. They perfectly time the many intricate functions of the garnett, eliminating wasted power common to other methods of power transmission. Baldwin drives are cleaner and collect less dust and dirt.

Baldwin roller chain belts are easily installed on long or short centers . . . on cards, garnetts, pickers, twisting frames, printing machines, in fact, throughout the textile mill. Wherever they are used, they help cut operating costs . . . assure a smooth finished product.

BALDWIN ROLLER CHAIN BELTS GIVE YOU THESE ADVANTAGES:

1. **Maximum shock-absorbing ability.**
2. **Infrequent, low-cost, easy maintenance.**
3. **No hazard from static electricity—or overheating.**
4. **Simplicity of installation and replacement.**
5. **Quiet in operation—do not create vibration.**

For complete information on Baldwin roller chain belts, call your Baldwin Man or write for your copy of Catalog M. Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.



BALDWIN

ROLLER CHAIN BELTS

LET'S TUNE UP FOR POST-WAR WORK

Check up

WAR-TIME ENGINEERING

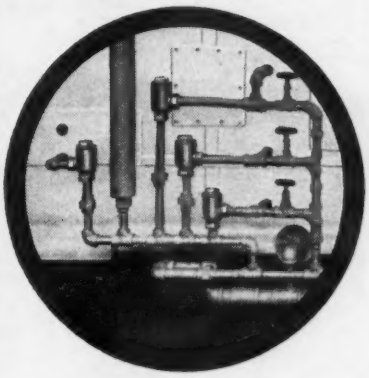
Scores of ideas for plant improvement are given in the Sarco Hook-up Book.

One phone call and a few inexpensive, quickly installed Sarco steam traps and temperature controls can correct the many inefficiencies due to war-time engineering and lack of help or equipment in the time allotted.

First consideration should be given to drips on steam lines and suitable traps and temperature controls for heating and cooling systems.

Increase

PROCESS CAPACITY

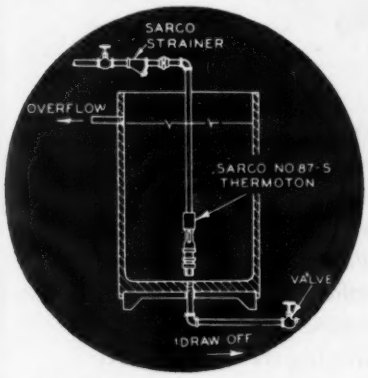


Sarco No. 9 thermostatic steam traps on each coil increased the capacity of this bottling machine.

The right steam traps and controls will make steam coils larger in output, your fuel and water bills smaller. This is substantiated by statements of Sarco users. It is the reason why all Sarco-equipped plants are ready for competition. Put one steam trap on each coil. Ask the Sarco representative about simple, inexpensive forms of heating and cooling controls.

Insure Service

ON WASHING TANKS

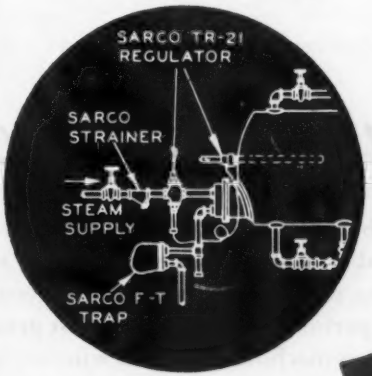


The Sarco 87 S acts like a steam injector, controls temperatures in tanks and other processes.

Tons of water and fuel are saved every day by controlling temperatures in wash tanks. Output is speeded—quality of product improved—continuity of production insured.

Improve

HOT WATER SERVICE



Sarco steam traps and control regulate the hot water supply.

Control temperatures at the source of supply for showers, process hot water and storage tanks with Sarco temperature control.

STEAM HOOK-UPS

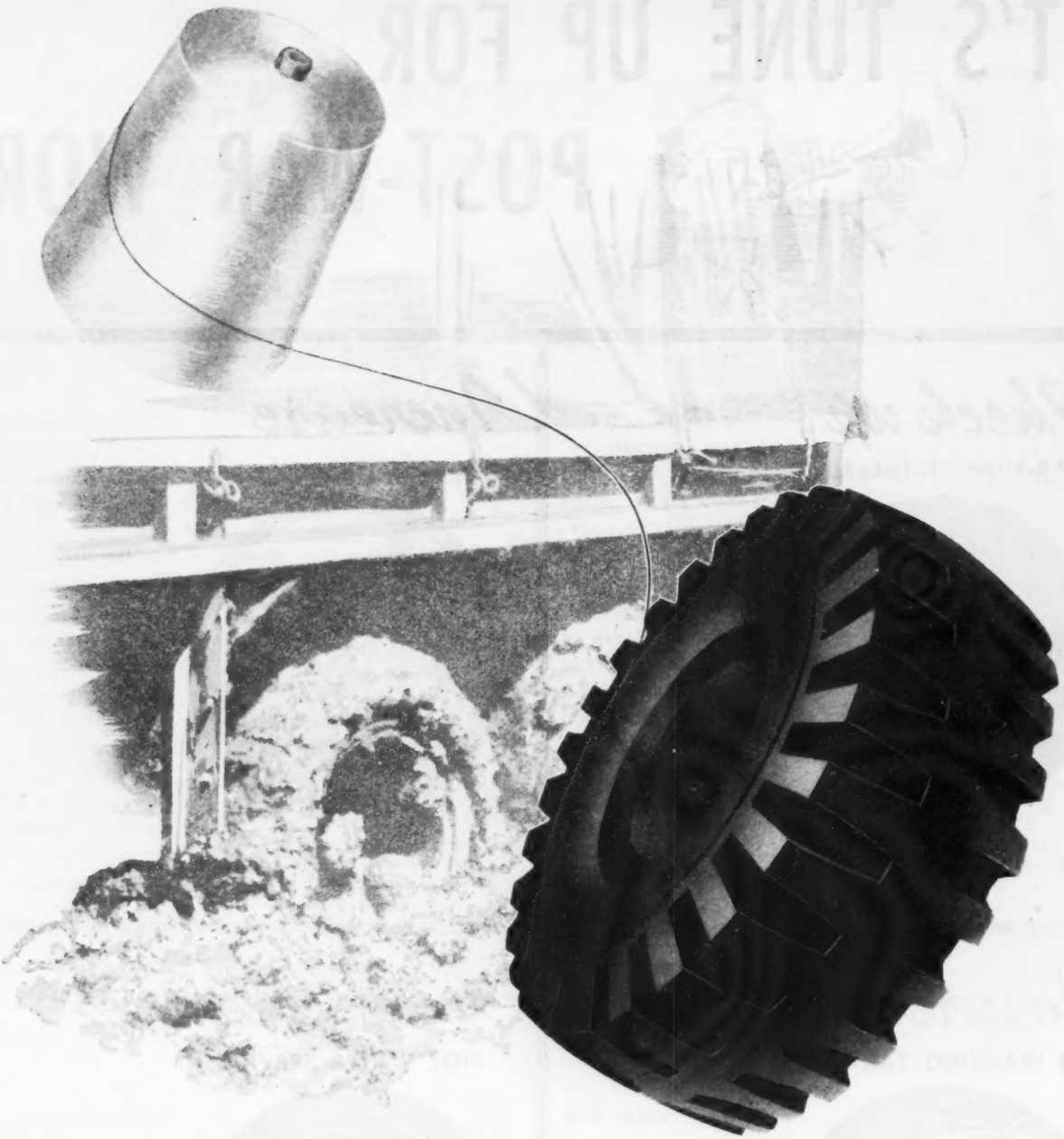
41

SARCO COMPANY, INC.
475 FIFTH AVENUE
NEW YORK 17, N. Y.

Represented in Principal Cities

SARCO Saves Steam

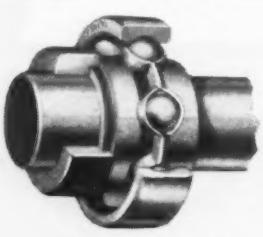
SARCO CANADA, LTD., 85 Richmond Street, West, TORONTO, ONTARIO



Small parts keep 'em rolling

Small but vital are the Fafnir Ball Bearings in machines producing the materials of war. A notable example are the smooth, swift-running machines, Fafnir-equipped, which turn out millions of miles of high tenacity rayon tire cord – an efficiency finally proved in tire performance under the most gruelling battle-front use. Fafnirs, widely used today in process machines, twisters, winders, warpers and slashers, are proving their superiority in long, efficient and uninterrupted service with substantial savings in maintenance and replacement cost. The Fafnir Bearing Company, New Britain, Connecticut.

Single Row Radial



Wide Inner Ring

Mechani-Seal

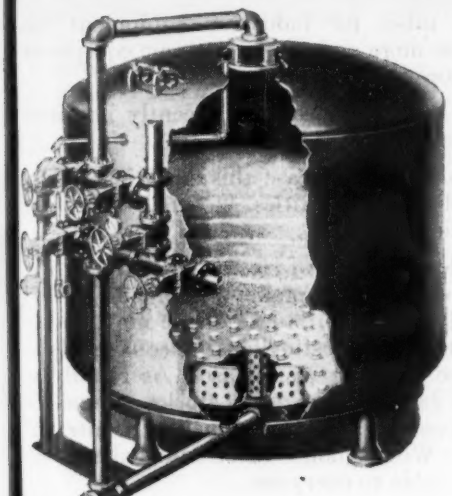
FAFNIR

BALL BEARINGS

BUY WAR BONDS AND STAMPS

CLEAR, SPARKLING WATER

. . . for better textiles.



Cutaway view of a Graver Water Filter showing the unique underdrain system which insures uniform distribution over the entire filter bed.

There's no two ways about it . . . clear, sparkling water is essential to the production of fine textiles. And you can have it . . . regardless of the quality of your raw water supply.

Graver Water Filters are designed and built to remove the last trace of suspended matter . . . to remove iron or oil . . . or even odor . . . delivering a water that will meet the most rigid requirements. Either pressure or gravity type, vertical or horizontal, can be supplied in whatever size your needs dictate.

Graver specializes in the design, fabrication, and installation of water conditioning equipment of all types, and Graver-built units are demonstrating their efficiency and economy in many of the country's leading textile mills.

Whatever your water conditioning problem . . . consult Graver. We'll gladly submit unbiased recommendations and estimates without obligation.

GRAVER

WATER CONDITIONING EQUIPMENT

Process Equipment Division
of

GRAVER TANK & MFG. CO., INC.

4809-67 Tod Ave., East Chicago, Ind.

NEW YORK CATASAUQUA, PA. CHICAGO TULSA

Hot Process Water Softeners—Zeolite Water Softeners—Water Filters—Iron Removal Filters—Oil Removal Filters—Taste and Odor Removal Filters—Chemical Mixing, Feeding, and Proportioning Equipment.

Quick

LOCAL SERVICE ON INDUSTRIAL ELECTRONIC TUBES

The demand for electronic tubes for industrial equipment has jumped by leaps and bounds, as more and more electronic equipment has been used for faster and more accurate production.

Like all tube manufacturers, Westinghouse until recently has been hard pressed to make deliveries.

Today our production is high enough to ease this situation. Many types of tubes are available in limited quantities. We can even deliver spare tubes for many electronic devices.

Looking ahead to continued development of electronic equipment in industry, postwar, we now have a plan to make Westinghouse Electronic Tubes quickly and easily available. Stocks of the most widely used tubes are now available through Westinghouse Electronic Tube Distributors and Westinghouse District Warehouses. As rapidly as possible additional types will be added to local stocks to make a complete line of Quality Controlled Westinghouse Electronic Tubes available to everyone.

Included in this new distribution setup is a plan for surveying the electronic tube needs of individual tube users to better serve their requirements. It will be to your advantage to have your plant included in this survey. Fill in the coupon below and without obligating you in any way, a representative will call and give you complete details and make the survey.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Westinghouse Electric & Manufacturing Co.
Electronic Tube Sales Dept.
Bloomfield, N. J.

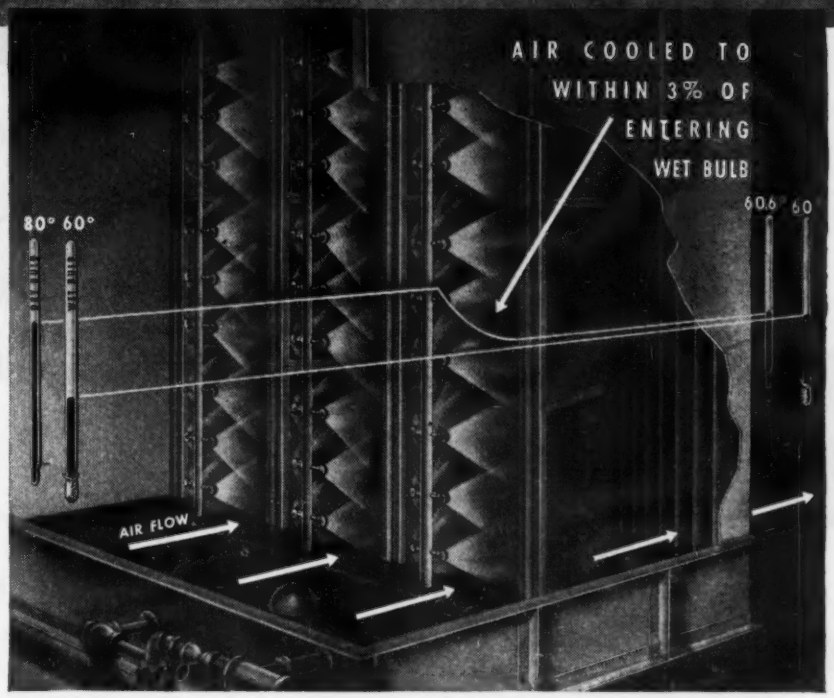
Please have your representative call and explain your plan for surveying our Electronic Tube needs.

Name .....

Address .....

ELECTRONIC TUBES *at work*

How this "Waterfall" CUTS YOUR AIR CLEANING COSTS



MORE EFFICIENT HUMIDIFYING AND SATURATION! That's what this special kind of "waterfall" means. It runs inside a Sturtevant Filter-Washer, down over a bank of filters.* *The result:* Air leaves the washed filters virtually saturated at the wet bulb temperature.

Such an arrangement offers far greater cleaning capacity, too . . . removes the finest dust and dirt. Here's why:

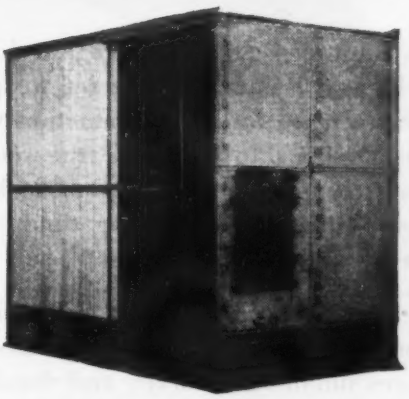
Filter banks are positioned to keep resistance of the unit low—about ⅜"—a Sturtevant design feature that holds power costs down.

Because filter pads are set vertically, more water flushes constantly over them from the spray nozzles. Hence more dirt is washed from the air into the sump tank. Even fungus, bacteria growth and pollen are removed. Excess water is taken off the pads by means of gutters, specially placed to regulate the fall.

Operating costs are further minimized by the reduced recirculation of water. For each 1000 c.f.m. of air at 700 f.p.m. velocity, for example, only 2½ gallons of water are needed to saturate air or gases and bring them to within a fraction of a degree of the entering wet bulb temperature.

Sturtevant Engineers are ready to help you design the Filter-Washer into an efficient, economical system. For further details, write briefly giving such pertinent details as:—kind of dust to be eliminated, type of water available, velocity through the unit and resistance of the system.

**Combining the functions of washing and filtering air is no new trick for Sturtevant. In fact, we've built and used such equipment since 1931 when we applied to patent "a device which sprays water on a filter pad." It was issued July 17, 1936—No. 2046716.*



Meet Postwar Conversion Problems with the help of *Sturtevant* "know how" *NOW*

Controlled indoor air is helping to provide comfortable conditions and lower production costs in hundreds of newly built war plants. Conversion to peace-time operation for these—as well as thousands of less modern buildings—will present many "Air at Work" problems that must be solved promptly—efficiently. Sturtevant is ready to work with consulting engineers, contractors or post-war planning committees *now*—to get recommendations down in black and white—ready for budget approval—and ready for action on Conversion Day.

B. F. STURTEVANT COMPANY • *Hyde Park, Boston 36, Mass.*

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work
SYSTEMS and EQUIPMENT
Engineered for Efficiency in
Heating
Ventilating
Air Conditioning
Dust and Fume Control
Pneumatic Conveying
Vacuum Cleaning
Mechanical Draft

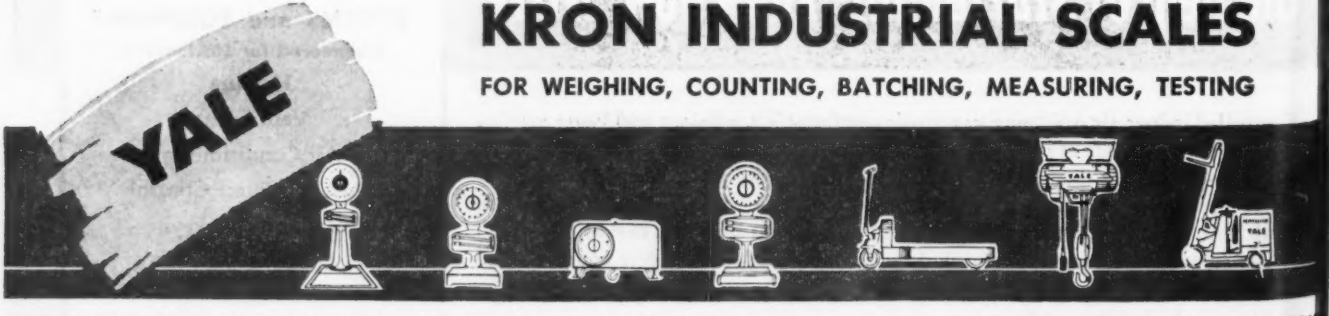
The improved KRON springless ball-bearing dial mechanism is industry's secret weapon in the war against *hidden losses* in production weighing operations. Designed to determine true weight quickly and accurately in a simple "load and look" procedure, it saves materials, conserves time and eliminates mistakes.

Precision-engineered around this unique dial mechanism, every KRON scale is reliable, fool-proof—assures unfailing accuracy and durability under all conditions of use. It provides the full capacity to weigh, count, measure and batch with an irreducible minimum of lost time and waste motion.

If you have a materials handling problem in high-cost weighing, investigate the benefits of reliable, long-life KRON scales. Write to The Yale & Towne Manufacturing Company, Philadelphia Division, Philadelphia 24, Pa., for your copy of the new catalog of KRON scales made by Yale.

... FULL VISIBILITY ASSURED!

Found only on KRON scales, the exclusive swivel dial head assures full dial chart visibility for accurate readings—eliminates point-of-view differences. Dial head can be rotated through a complete 360° arc at will.



KRON INDUSTRIAL SCALES

FOR WEIGHING, COUNTING, BATCHING, MEASURING, TESTING

MATERIALS HANDLING MACHINERY: TRUCKS—HAND-LIFT AND ELECTRIC · HOISTS—HAND AND ELECTRI

for **WOOLS**

for **COTTONS**

for **RAYONS**

Red oil combines directly with water soluble alkalies to make excellent emulsifying agents and soaps which are uniform and free rinsing. Only a minimum of boiling with a mild alkali is required . . . soda ash, for example. This means a saving in both time and material.

But more important is the wide latitude offered in the choice of titre and alkali, which permits you to control the important characteristics of these soaps and emulsifying agents to more exacting specifications.

Emery's oils for processing textiles include also the well-known, time-tested Twitchell Wool and Worsted Oils 3X and 304 for sanforized finishes, and oils 681 and 685 used in the production of rayon yarns.

The stimulus for the production of textile oils with special characteristics often comes from the prospective user who knows his own requirements . . . from you, perhaps. If you'll write and tell us your requirements, we'll be glad to suggest the specific textile oil that will help you in current or future production.

DISTILLED RED OILS (OLEIC ACIDS)	
Brands	**Characteristics**
Emery's O-18 and O-19 Extra Elaines	All-purpose, distilled oleic acids whose titres range from 8°-12° C. and 3°-5° C. Recommended for most uses except where very light color is desired.
Emery's O-303 Special Extra Thin Elaine	A new grade still further processed to bring the titre below 3° C. Recommended for uses where this very low titre is required.
Emery's O-20 and O-21 Olive Elaines	Chemically, Emery's Olive Elaines are the same as Extra Elaines. However, they are more highly refined to produce very light colored liquid fatty acids.
Emery's O-131 Special Olive Elaine	This is an extremely pure, light colored Olive Elaine to be used where exacting specifications demand only a superior raw material.
SAPONIFIED RED OILS (OLEIC ACIDS) (UNDISTILLED)	
Emery's O-22 Medium Titre	A saponified oleic acid of exceptional purity. Titre range from 15°-18° C.
Emery's O-23 High Titre	Similar to Emery's O-22, but with a titre ranging from 25°-26° C.

LABORATORY-CONTROLLED THROUGHOUT PRODUCTION — EMERY INDUSTRIES INC.

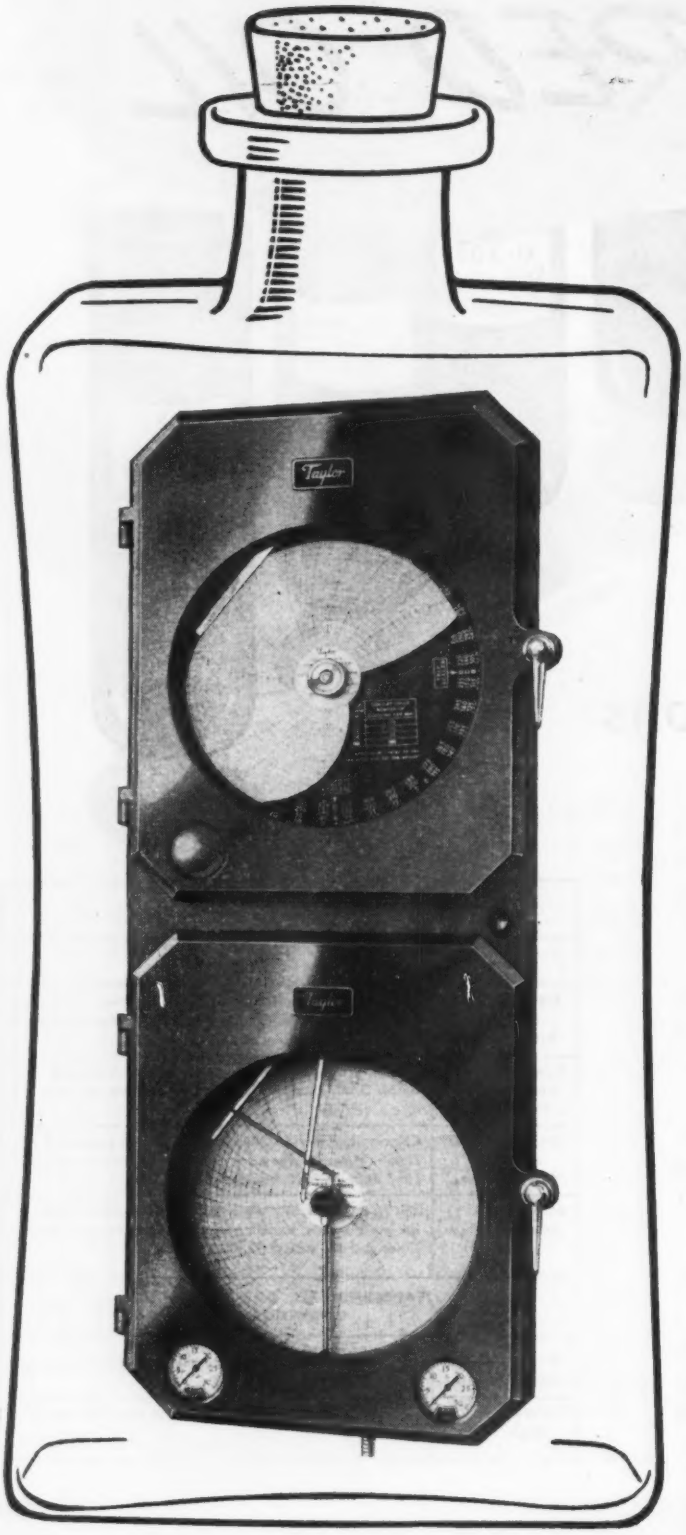
EMERY INDUSTRIES, INC.

4300 Carew Tower · Cincinnati 2, Ohio

Branch Offices: New York, N. Y. . . . . Philadelphia, Pa. . . . . Lowell, Mass.

PLASTICIZERS . . . STEARIC, OLEIC, ANIMAL, VEGETABLE AND FISH OIL FATTY ACIDS . . . TWITCHELL PRODUCTS

NOT A "CURE-ALL"



WE have to caution our Field Engineers when discussing the Taylor Fulscope Time Schedule Controller. It *is* an amazing instrument — but it won't completely revolutionize your business. The fact is there are dozens of variables in dyeing and several in size cooking, and the Time Schedule Controller will take care of only *two* of them—time and temperature.

But these two are controlled to the Queen's taste. For instance, in cooking size once you have determined your ideal cooking schedule, you can reproduce it *every time.* No overboiling. No over-flowing. All you do is load the kettle and push the button—and the Taylor Time Schedule Controller does the rest! Its dual case construction makes the control, cam, and trip mechanisms readily accessible. And its many auxiliary functions make it easy to add extra processing steps. If necessary, you can get it in double-duty form for control of two related temperature, pressures, or flows, or combinations of each.

Your Taylor Field Engineer can give you the facts, and he can analyze your particular conditions and help you set up exactly the schedule you need for best results. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow and liquid level.*

BUY AN EXTRA BOND TODAY!

ARMY E NAVY

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

PALATINES

FOR Wool

A complete range of Acid Dyeing Colors... Fast to Light —Washing — Perspiration — Crocking — Sea Water and Wear... Level Dyeing on Mixed Wool and Carbonized Goods without neutralization — with excellent penetration. Most types are dischargeable with rongalite.

Palatine Fast Colors are particularly suitable for Men's Wear — Dress Goods — Gabardines — Tropical Worsteds — Cloakings — Bathing Suits — Knitting Yarns — Carpet Yarns and Tops.

Palatine Fast Colors offer the lowest coloring costs for quality results.

On Nylon Palatine Fast Colors give maximum fastness to Light and Washing. The method of application is simple and the results are excellent.

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET · NEW YORK 14, N. Y.

BOSTON · PROVIDENCE · PHILADELPHIA · CHICAGO · CHARLOTTE · SAN FRANCISCO

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.
Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

•

ESTABLISHED 1840

in *Condor* V-BELTS

put your horsepower in Victory's harness

—through flexibility, lasting service and extreme lack of stretch. Stout, tough strands of pre-stretched cords in the Whipcord Neutral-Axis Section, carry the load smoothly from motor to machine. These Whipcords—the load-carrying sinews in Condor V-Belts—fortify the FLEXLASTICS* in which they are embedded and through which they dissipate the heat from internal friction and high-speed flexing.

Outwardly these basic qualities are not visible to the eye, but they confirm their value to you in months—often years—of added service, which is translated into more efficient power transmission, greater production, added profit and a better position when full-scale competition returns to enforce production cost control.

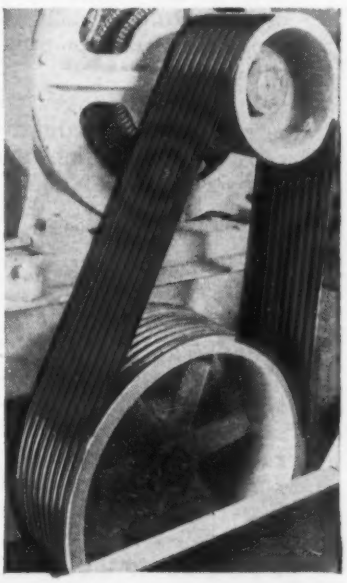
Condor V-Belts are only one of the many MANHATTAN industrial rubber products in which FLEXLASTICS,* with engineered and correctly placed Strength Members, deliver added service. The Condor Whipcord Strength Member is a MANHATTAN development.

Get ready now for the day when restrictions are dropped and write for the new Condor V-Belt Bulletin No. 6868B.**

8 POINTS OF BALANCE

1. Wide margin of strength
2. Minimum inelastic stretch
3. Uniform flexibility
4. Maximum resistance to structural breakdown
5. Smooth running
6. Maximum traction
7. High resistance to side wear
8. Correct lateral reinforcement

These 8 Points correctly embodied in every Condor V-Belt. Other factors being equal, the useful life of a V-Belt is limited by excessive stretch.



** The term FLEXLASTICS is an exclusive MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS.*

*** Condor V-Belts are now made in the dark, war-time color.*

KEEP AHEAD WITH MANHATTAN

THE MANHATTAN RUBBER MANUFACTURING DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

13 Reeves Transmissions

REGULATE SPEED AND TENSION IN TWO FINISHING RANGES ★ ★ ★

● In the operation of a finishing range, two things are exceedingly important: the speed of the cloth through the range; and the tension of the cloth at each stage of the range, to prevent undue stretch or shrinkage.

In the two ranges shown here, one with Mangle and five stacks of cans, and the other with Mangle and six stacks, a No. 5 Class E (4:1 speed ratio) REEVES Variable Speed Transmission is the master control, regulating cloth speed in the range to the right. A No. 6 Class E (4:1 speed ratio) regulates cloth speed in range to the left.

Other sizes of REEVES Transmissions, each different and carefully selected for horse power and speed ratio, drive the mangles, and accurately regulate cloth tension between the stacks of cans.

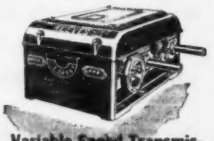
Thus it is not only possible to regulate the speed for various weights of cloth, but also to permit shrinking or stretching of goods to meet exact requirements.

The speed and tension may be changed at any one place along the range, without changing the relationship or tension of cloth between any of the other stacks of cans. When once pre-set for any desired shrinkage or stretch, this setting is maintained *accurately* regardless of speed changes made through the master control for higher or lower cloth speed.

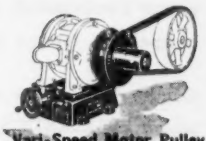
Ease and accuracy of adjustability, and proven dependability for this and many other applications, have made REEVES the predominate speed control method of the textile industry. For additional data, write for 128-page Catalog WG-435.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

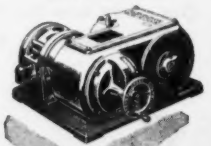
The 3 Basic Units in the REEVES LINE



Variable Speed Transmission for infinite speed adjustability over wide range.



Vari-Speed Motor Pulley converts any standard constant speed motor to a variable speed drive.



Motodrive combines motor, speed varying mechanism, reduction gears.

REEVES *Accurate Variable* Speed Control

Here's a heavy-duty loom oil that—

DOES NOT RUST DRIP or CREEP

SHELL TEXTILIS OIL 72G

MANUFACTURERS who are having trouble with their loom oil creeping and dripping all over the place will appreciate Shell Textilis Oil 72G.

Although it "stays put" on the machine, it is readily removed from the goods in the finishing process, leaving no costly, tell-tale stains.

Shell Textilis Oil 72G is but one of a complete line of lubricants designed specifically for each type of textile machine lubrication.

It will pay you to discuss your Textile lubricating problems with a Shell Lubrication Specialist.

SHELL

TEXTILIS OILS

SHELL OIL COMPANY, INC.

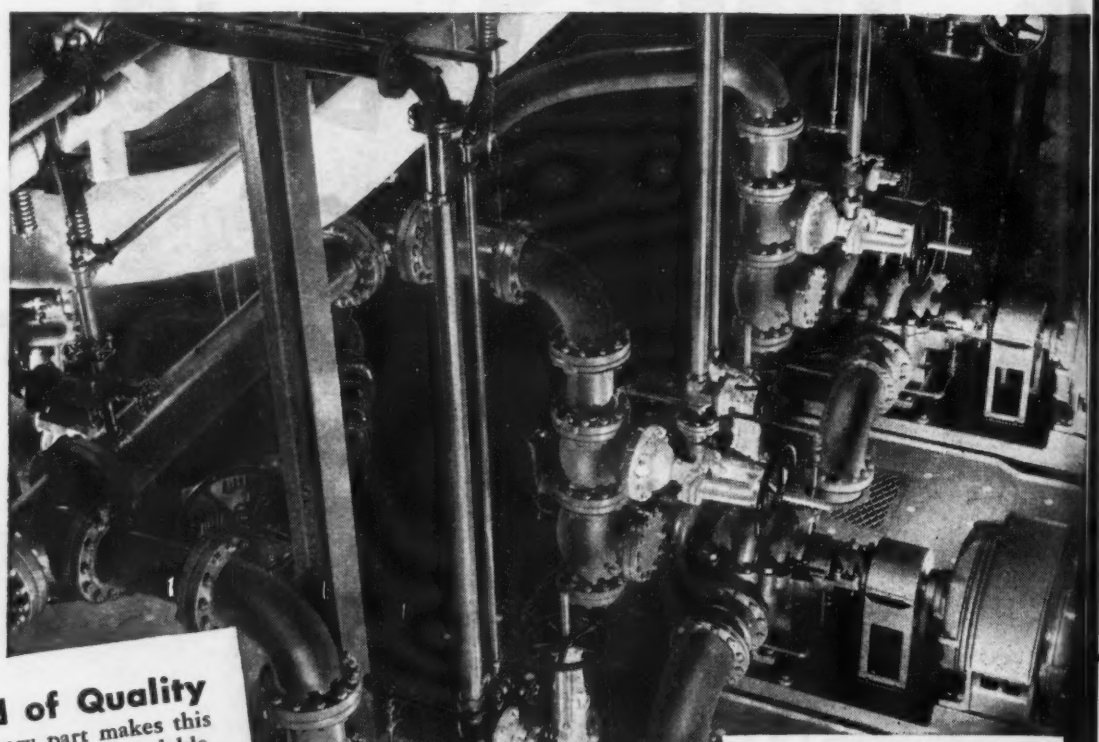
No matter what the service . . . CRANE supplies all Piping Needs

ONE SOURCE OF SUPPLY . . . ONE RESPONSIBILITY FOR ALL MATERIALS

For any power or processing installation—high, moderate, or low pressure—all your piping equipment needs can be filled at one source. Your Crane Branch supplies everything—valves, fittings, pipe, fabricated assemblies, and all piping accessories. With the world's greatest line of such materials, Crane insures proper selection for every service.

A primary factor of good installation, one responsibility for piping materials assures equal quality and craftsmanship in every part. Ordering, maintenance work, keeping of parts stocks and making replacements—all such operations are simplified when you use Crane *complete* materials service. And you're sure of getting full benefit of Crane Co.'s 89-year experience and leadership in the piping equipment field.

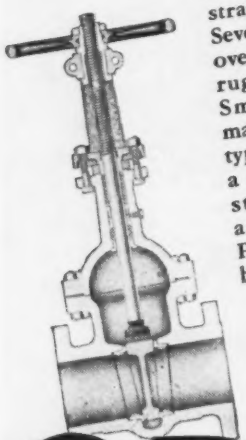
Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois. *Branches and Wholesalers Serving All Industrial Areas.*



Condensate and feed-water piping in a large power plant

One Standard of Quality

Adequate quality in every part makes this entire piping system thoroughly dependable. Such quality is typified by Crane Steel Gate Valves. Finest flow behavior results from their straight-through ports. Severest line stresses are overcome by sound and rugged body castings. Smooth operation is maintained by a ball joint type stuffing box gland, a strong tee-head disc-stem connection and ample stem bearings. Positive seating is assured by extra long guide ribs.



CAST STEEL WEDGE GATE VALVES

ALL PIPING MATERIALS BY CRANE

- Gate Valves
- Globe Valves
- Check Valves
- Flanged Fittings
- Flanges
- Gaskets, Studs and Bolts
- Pipe
- Fabricated Piping
- Screwed Fittings
- Unions and Union Fittings
- Pipe Hangers and Supports
- Pipe Covering, etc.

CRANE

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

. . . ADD A PLACE AT YOUR PLANNING TABLE

FOR A *Reliance* MAN!

He can help machinery builders to put added sales appeal into that new machine.

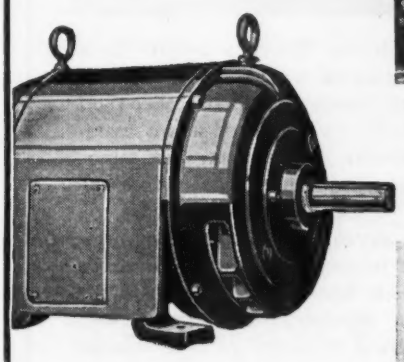
He can help manufacturing and processing plants to get the most from new production machinery or processing lines.

He can help by getting electric motor-drive into the picture early, where it properly and profitably belongs —so that design and planning begin with the question "What functions can the motor perform besides supplying power?" Reliance engineers in the industrial centers listed below can aid you in finding profitable answers.

Motor Drive Provides Within Itself a Means of

SPEED CONTROL • REVERSING
BRAKING • CONTROLLED ACCELERATION
TANDEM OPERATION • REMOTE CONTROL
TENSION CONTROL • SAFETY
SLOW SPEEDS (FOR INCHING, THREADING, INSPECTION)

Applying these functions to boost production and improve quality is APPLICATION ENGINEERING. That's our business.

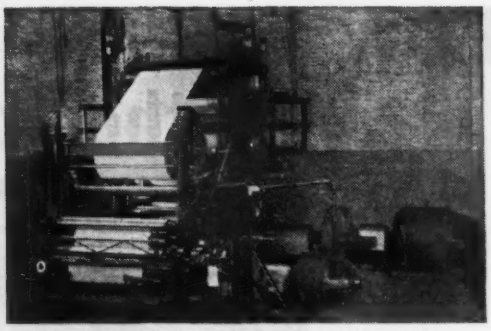


RELIANCE A·C D·C MOTORS

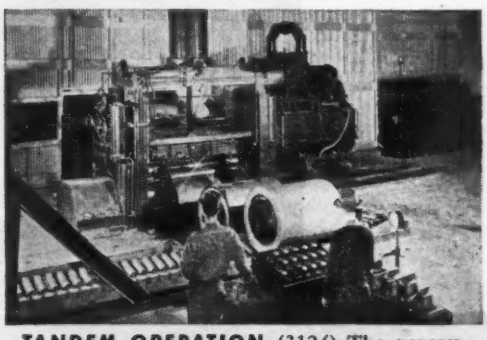
RELIANCE ELECTRIC & ENGINEERING CO.
1069 Ivanhoe Road • Cleveland 10, Ohio

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S. C.) • Houston Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis Salt Lake City • San Francisco • Syracuse • Washington, D. C. • and other principal cities

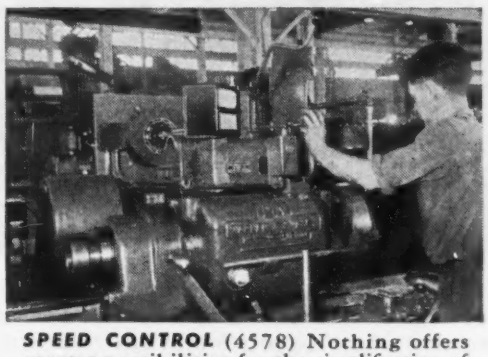
AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS



TENSION CONTROL (2569) Reliance Motor-drive for Tension Control is a good example of taking full advantage of characteristics inherent in the motor. It eliminates troublesome clutches . . . contributes substantially to the quality and uniformity of product which must be processed under tension.



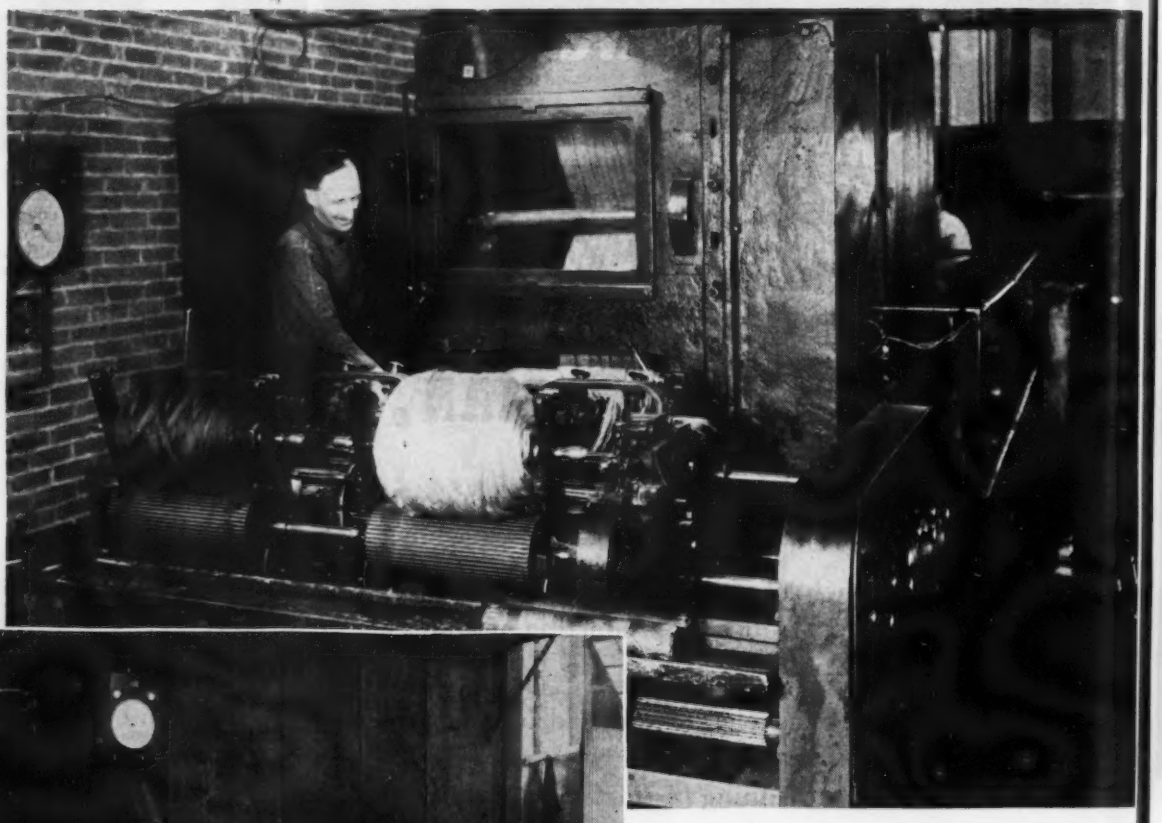
TANDEM OPERATION (3124) The processing of materials in coil form is facilitated by the use of Reliance Tandem (or Range) Drive. Material moves faster with less handling . . . driving parts are simplified, space is saved. This is a subject of every-day consideration at Reliance.



SPEED CONTROL (4578) Nothing offers greater possibilities for the simplification of machine design than Reliance Adjustable-speed Drives. Available for both A-c. and D-c. Ease and convenience of control contribute to all-day, top-notch production.

STREAMLINING (3691) Used as a basis for streamlined design Reliance Motor-drive contributes to much more than beauty. Power is closer to where it is needed,—there are fewer mechanical "go-betweens". Control of starting, stopping, speed changing, reversing are centralized with other machine operations. The motor is made to do its complete job as a production aid.

HOW TO GET "IN-BETWEEN"— Neither too HOT nor too COLD . . .



Bristol improves quality and saves costs by controlling temperature in processes where too *much* heat impairs product quality and wastes steam and too *little* heat results in poor processing!

In one Canadian woolen mill where a Bristol Temperature Controller is at work, the manufacturer recently told us, "*The improvement in quality is so great, we would continue to use The Bristol Controller, even if steam costs had been increased instead of decreased.*" Here, steam savings alone amounted to $84.00 a month. In a Pennsylvania woolen plant another Bristol Temperature Controller paid for itself in two weeks on steam saved.

However, steam savings are minor compared to the *increased production, improved quality* and *uniform drying* that results from automatic temperature control. Bristol's complete line of instruments for the textile industry adds extra quality and profit to every yard of finished goods.

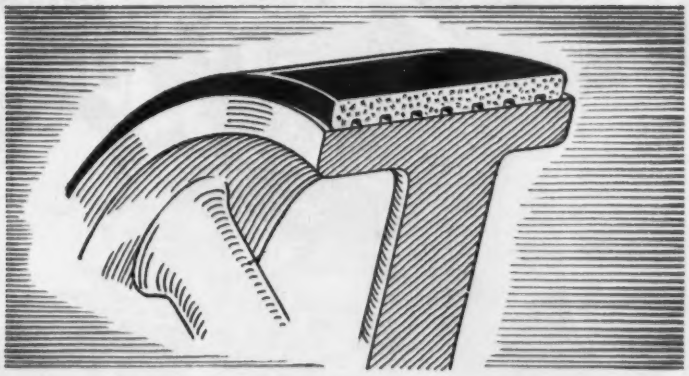
Write today for free Bulletin T 800 on Temperature Controllers.

OTHER BRISTOL AUTOMATIC CONTROLLERS AND RECORDERS FOR TEXTILE PURPOSES

1. Recording Temperature Controllers for Bleach Kiers.
2. Continuous pH Controllers and Recorders.
3. Humidity Recorders for Carding, Combing, Drawing, Spinning, and Weaving.
4. Automatic Temperature Controllers for Mercerizers.
5. Power Plant Instruments.
6. Tachometers for Yardage through Tentering Dryer.
7. Automatic Control for Dye Jigs, Dye Machines and Dye Kettles.
8. Flow Meters for Measuring Steam to each Department.
9. Automatic Control for Washing and Bleaching Equipment.
10. Slasher Control Systems.

Engineers Process Control for Better Products and Profits

THE BRISTOL COMPANY
157 Bristol Road, Waterbury 91, Conn.
The Bristol Co. of Canada, Ltd. Toronto, Ontario
Bristol's Instrument Co., Ltd. London, N. W. 10, England
AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS



To the man who has never used

TREADED LEATHER BELTING

on textile drives

If you could increase your production per machine even a fraction of one per cent merely by installing a more efficient belting drive, that small expense would soon pay dividends.

Houghton's Treaded leather belting will give you more production because of its flexibility which enables it to hug the pulley at all speeds, and its patented tread which means "more grip—less slip".

By treading the belt, we increase the pulley contact pressure on the raised portion without increasing the total tension or having to run the belt excessively tight. The principle is much the same as that of the non-skid tire; decreasing the contact area increases the resistance to slippage.

The quality of Houghton's VIM Tred and OKAY Tred Leather Belting has not been adversely affected by war shortages. The exclusive tannage and the high quality craftsmanship of belt making are the same today as in pre-war times.

The most efficient short center drive you can install is a combination of VIM Tred Leather Belt and a pivoted motor base whereby uniform proper tension is maintained automatically.

Get the story of treaded leather belting from the Houghton man and you will decide to make the next belt you buy, the best belt you can buy—make it VIM Tred or OKAY Tred. E. F. HOUGHTON & CO., 303 West Lehigh Avenue, Phila. 33, Pa.

Houghton's

TREADED

Leather Belting

IF YOU ARE FIGURING on equipment replacement (and who isn't, in the textile field?) it will pay you to know about all the lighter, speedier, precision machines—made of stainless steel—that have proved more efficient, more economical, under pressure of war production.

Think what it means to be free from rust stains, off colors, bleeding and other causes of spoiled cloth, that frequently cause redying and cut down production. You can have these and other advantages with stainless steel equipment.

In many big dye-houses where U·S·S Stainless Steel is used in every place where wet cloth touches metal, foremen tell us they are making longer runs of bright, uniformly true color, quicker color changes, without danger of "canker" or copper sulfide stains.

The lighter, stronger equipment runs more rapidly. Less weight and precision manufacture mean less noise, less noise means less wear. Cleaning time is cut to the bone. So U·S·S Stainless Steel equipment can be pushed to new high limits without any proportionate increase in repairs or maintenance. Longer life in service, higher product quality, savings in time and labor costs make the purchase of equipment made of U·S·S Stainless Steel a positive economy.

The qualities that make U·S·S Stainless Steel the ideal material for the fabrication of textile equipment are achieved by accurate composition, precise heat treatment of each grade of stainless, by men who do nothing else. We have separate manufacturing units, advanced equipment operated by specially trained personnel, for the manufacture of U·S·S Stainless Steel.

Our technical staff will be glad to consult with you—and with the fabricator you select—before you order needed equipment.

Make sure that you get the exact grades of U·S·S Stainless Steel that are needed to meet your special requirements. Write for full information today, you incur no obligation.

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

COLUMBIA STEEL COMPANY, *San Francisco*
AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
NATIONAL TUBE COMPANY, *Pittsburgh*
United States Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

USS

UNITED STATES STEEL

Century Explosion Proof Motor

PROTECT LIFE • PROPERTY • PRODUCTION *with Century Explosion Proof Motors*

Century Explosion Proof motors protect you, your employees, and your plant against explosions and fire when they are located in atmospheres charged with explosive mixtures of alcohols, acetone, lacquer solvent vapors, natural gas, petroleum products, gasoline, naphtha, grain dusts, and other explosive dusts. These explosive hazards come under classifications Class I Group D and Class II Group G of the Underwriters' Laboratories.

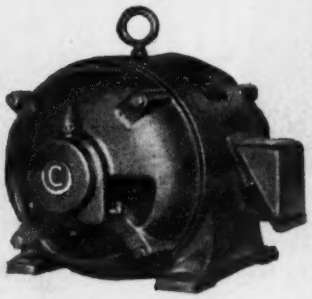
Century Explosion Proof motors are made with many variations in operating characteristics, such as high torque, normal torque, low torque, multiple speed.

Forced air cooling fans carry off the heat produced by the motor operation. This keeps the vital parts of the motor cool and, in addition, blows dust out of the air passages and keeps the motor frame clean.

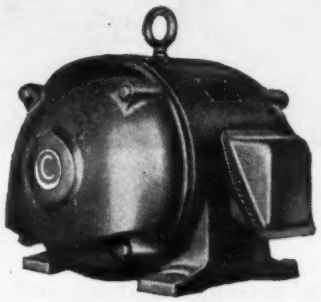
The contour of the motor frame is smooth and streamlined, making it easier to keep the outside of the motor clean and neat in appearance.

If hazardous atmospheric conditions are a problem in your plant, ask a Century engineer to give you complete information on Century's Explosion Proof motors.

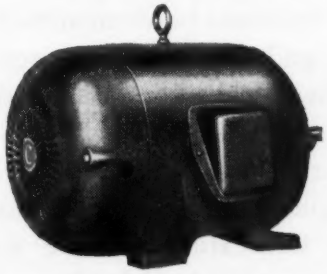
3 OTHER TYPES OF PROTECTION



Form J — General Purpose Application



Splash Proof Protection

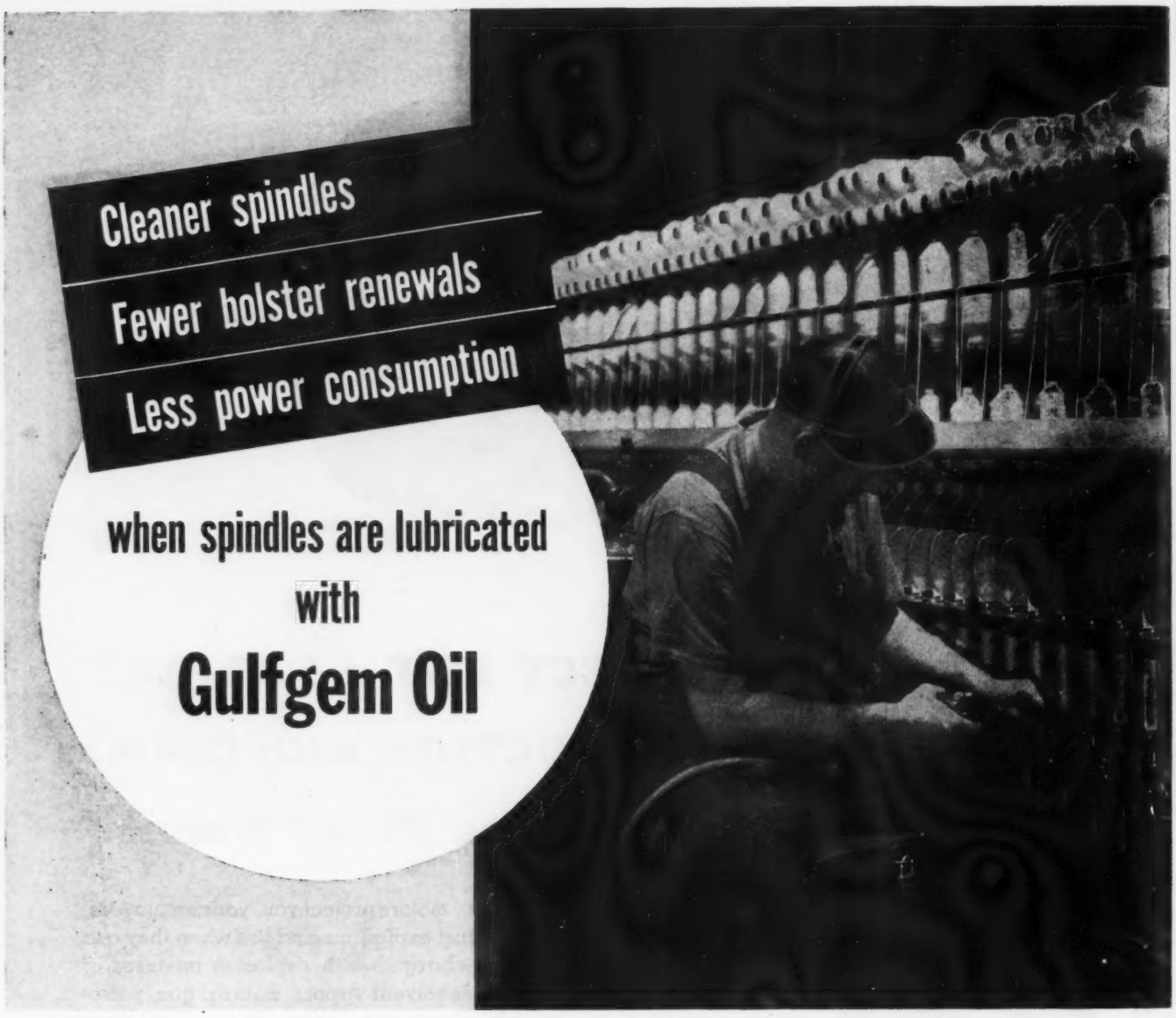


TEFC — Protects Against Destructive Dust, Grit, Powdered Materials

CENTURY ELECTRIC COMPANY

1806 Pine Street St. Louis 3, Missouri

Offices and Stock Points in Principal Cities



EXPERIENCE OF HUNDREDS of leading mills has demonstrated conclusively that Gulfgem Oil provides better lubrication for spindles—the kind of lubrication that insures maximum poundage from spinning frames.

Here's the important reason for the outstanding record of Gulfgem Oil: This highest quality lubricating oil is not only refined by conventional methods, but is super-refined by the Gulf Alchlor Process, the most effective method known for producing a spindle oil with maximum resistance to oxidation and gumming.

Thus Gulfgem Oil provides a tough and stable film which insures less wear, reduced power consumption, longer intervals between spindle base cleaning periods, and lower maintenance costs. Gulfgem Oil is the world's finest oil for spindle lubrication!

We suggest that you talk with the Gulf Lubrication Service Engineer in your vicinity about this superior spindle lubricating oil. He will be pleased to give you complete details—without obligation. Write, wire, or phone your nearest Gulf office today.

Back the Attack . . .
Buy More War Bonds!

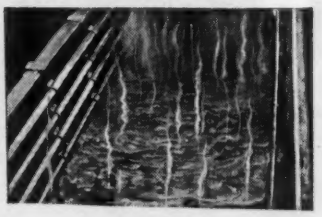
GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION
GULF REFINING COMPANY
GULF BUILDING, PITTSBURGH 30, PA.

TELLURIUM LEAD DATA SHEET

SUBJECT: *Elevated Temperatures in Acid Equipment*

Heat accelerates corrosion: Every plant man concerned with the maintenance of acid handling equipment recognizes *heat* as Equipment Enemy No. 1.



Aside from its effect on the physical properties of corrosion-resistant metals, heat accelerates corrosion. Solutions and gases easily handled at room temperatures become increasingly destructive as the heat indicator rises.

In a number of plants Tellurium Lead has made it possible for equipment to operate satisfactorily at temperatures which made short work of the lining and piping materials previously employed—as the typical testimonials below will corroborate. For this reason it is generally recognized as the "high temperature lead."

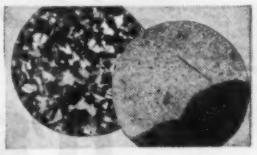
Flash test: Laboratory proof of Tellurium Lead's improved corrosion resistance at elevated temperatures is furnished by the flash test:

In a typical test, Tellurium Lead (top) and lead without tellurium (bottom) were immersed in 96% sulfuric acid at 581° F. for three minutes.

The weight loss of the Tellurium Lead (due to corrosion) was 0.97% while that of the lead without tellurium was 5.11%.

Tellurium Lead's greater corrosion resistance at elevated temperatures, as well as its generally superior performance under heat changes, vibration and stress-corrosion, undoubtedly result from a combination of the characteristics enumerated at right, which distinguish it from lead without tellurium.

1. More stable grain structure: One factor contributing to its corrosion resistance at elevated temperatures is Tellurium Lead's stability of grain structure under prolonged heat exposure. All metals tend to change their granular formation at certain heat levels. This recrystallization or "grain growth" is generally believed to have a marked effect on acid resistance and physical strength.

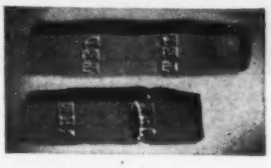


Through the addition of tellurium, the recrystallization temperature of lead is raised from about 22° F. below zero to more than 200° F. Thus Tellurium Lead is more stable—freer from grain growth than lead without tellurium, even at temperatures higher than those to which lead equipment is ordinarily subjected.

The accompanying photomicrographs show the grain structures of Tellurium Lead (left) and lead without tellurium (right) after annealing six months at 302° F. The grains of the lead without tellurium "grew"; those of Tellurium Lead remained the same size.

2. More uniform grain structure: Another factor is Tellurium Lead's generally more uniform and finer grain structure. As a result, its surface is smoother—there is less possibility of pitting and local corrosion.

3. Work-hardens: Tellurium Lead has the ability to strengthen under stress. Physical stress actually increases its tensile strength and makes it more fracture-resistant than before. For example,



these strips of Tellurium Lead (top) and lead without tellurium (bottom) were stamped and pulled out at equal rates in a tensile testing machine. Note how the Tellurium Lead was toughened by the stamping, how it work-hardened and developed strength, whereas the lead without tellurium was weakened—and fractured.

Who uses Tellurium Lead: Tellurium Lead is widely used in contact with sulfuric acid and sulfates, phosphoric acid and chromic acid; also in contact with pickling, electroplating and other corrosive solutions.

Types of chemical operations in which Tellurium Lead is employed include: chlorinations, reaction chambers, reductions, pickling, sulfonations.

Typical installations: agitators, aprons, drums, ducts, fans, flooring, heat exchangers, heating and cooling coils, kettles, pans, stills, table tops, tanks, vats.

☆

Easily applied: Tellurium Lead may be bent, seamed, flanged, burned, in the same manner as chemical lead.

TYPICAL TESTIMONIALS

One user of Tellurium Lead reported that, eight months after installation, "the lining in our tub showed little if any corrosion due to the effect of the 10 per cent boiling sulfuric acid to which it is exposed."

• • •

Another user—whose equipment is subjected to temperatures ranging up to 180° C.—says, "We find Tellurium Lead withstands chemical action to a much greater extent than the material used previously."

• • •

The engineer of another plant which used Tellurium Lead tubing for three years in a submerged combustion process where the temperature in places approaches the melting point of lead wrote, "The tubing is still in use and in excellent condition."

TELLURIUM LEAD

What it is: Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It gives the advantages of this well-known chemical lead plus new ones.

Available forms: Tellurium Lead is available in sheet or pipe form or fabricated in coils for heating and cooling purposes.

For further information or advice regarding the use of Tellurium Lead, write:

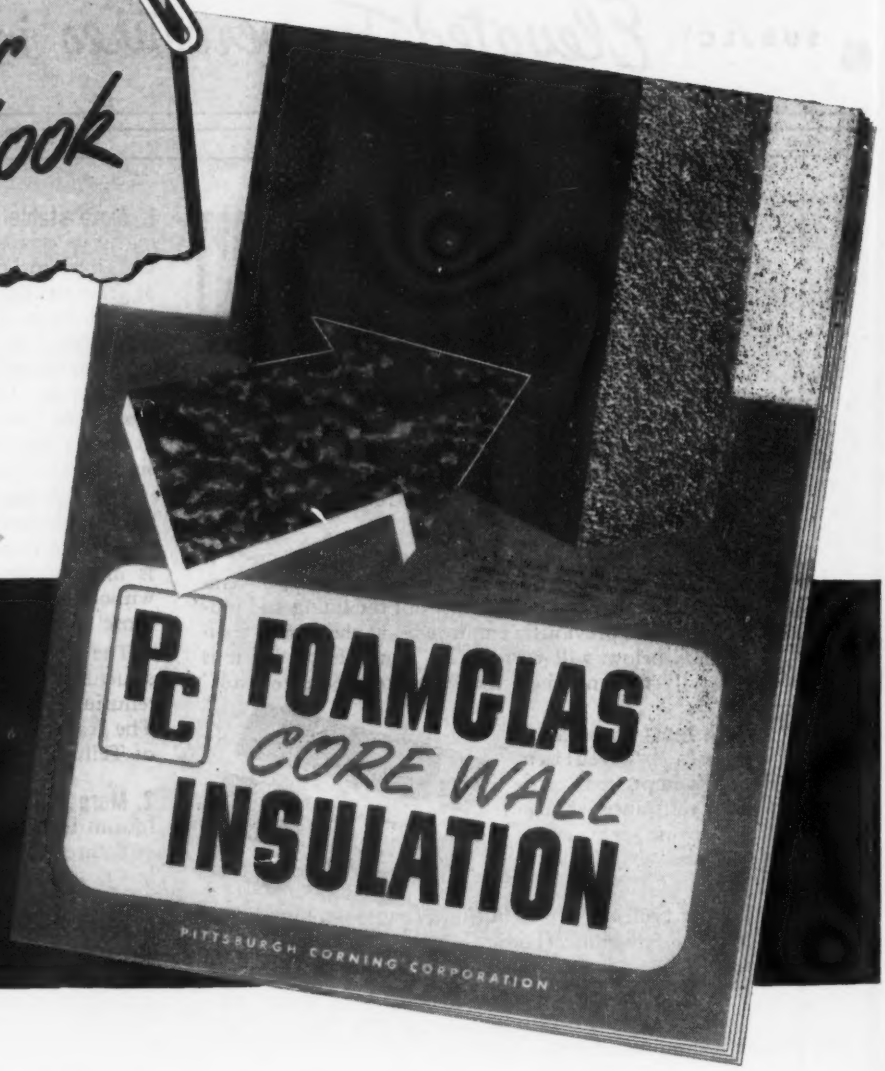
NATIONAL LEAD COMPANY—New York 6, Baltimore 3, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St. Louis 1; National-Boston Lead Co., Boston 6; John T. Lewis & Bros. Co., Philadelphia 7; National Lead & Oil Co. of Penna., Pittsburgh 12; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis 6; Master Metals, Inc., Cleveland 16; Morris P. Kirk & Son, Inc., Los Angeles, Calif.; The Canada Metal Co., Ltd., [illegible] Vancouver

MEMO

Send for this new book

IT'S FREE

It contains complete information on PC Foamglas the permanent insulation for corewalls that becomes an integral part of the wall.

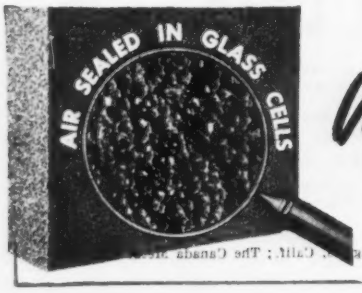


IN this new brochure, you will find complete engineering data—charts, tables and explanatory text—all the information needed by men who need efficient insulation and keep a sharp eye on costs.

In core walls, PC Foamglas becomes an integral part of the wall structure when tied in to brick or other backing and facing. It does not pack down, swell, shrink, warp or rot. Being glass, it does not deteriorate, is an efficient vapor-seal and water-stop as well as a permanent insulation. It helps to control temperature and humidity—to prevent condensation.

The same qualities that make PC Foamglas the ideal insulation for core walls have won it general acceptance for use in duct-work, floors, and roofs in many and varied types of industrial plants.

When you face any sort of insulation problem, consult our specialists on PC Foamglas. Meanwhile, fill in and mail the convenient coupon, and the new booklet, "PC Foamglas Core Wall Insulation" will be sent to you without charge or obligation.



PC FOAMGLAS

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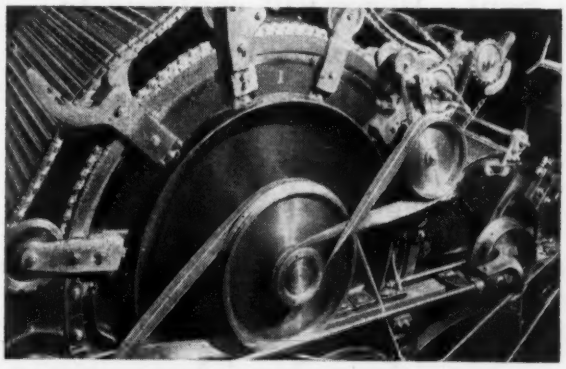
When you want legal advice, you go to a lawyer. But, when the carburetor on your car needs adjusting, you get a good auto mechanic. It takes a *specialist* to do the job right!

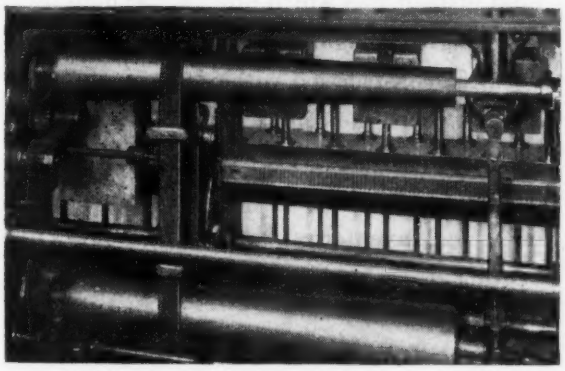
GILMER SPECIALIZES IN BELTS

Gilmer has a complete line of belts for the Textile Industry, engineered by specialists . . . the right belt for every power transmission job. And the Gilmer Engineering Staff specializes in power transmission problems. They are available for consultation without obligation. They can show you how to increase the efficiency of most of the drives in your plant by using dependable tight-gripping, slip-free Gilmers.



GILMER KABLE KORD LICKERIN BELTS

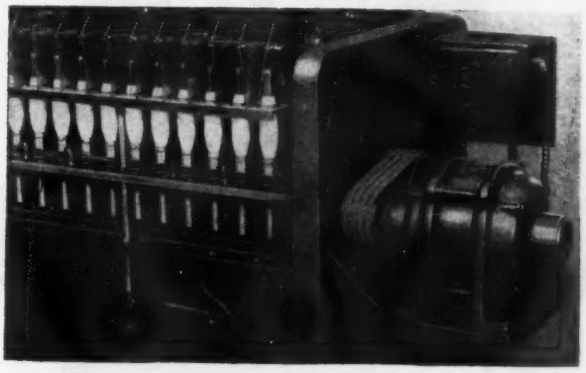
Increase production and outlast any belt on the market.



GILMER CONE DRIVE BELTS

Longer life in the toughest service and shift easily because of sturdy internal construction.

SOME SPECIAL GILMER BELTS:



GILMER V-BELTS

Deliver power from the motor to the spinning frames with maximum efficiency.

In addition, Gilmer has a complete line of Endless Round Belts for Carding Machines, Endless Cord Spinner Belts for Silk Throwing, and many others, all completely described in the handbook "Gilmer Belts for the Textile Industry." This handbook simplifies the details for specifying Belts for the great majority of drives. Write for your FREE copy today. It's yours for the asking.

Gilmer BELTS

I. H. GILMER COMPANY, Tacony, Philadelphia 35, Pa. • *The Oldest Firm of Rubber Fabric Belt Specialists*

A name worth remembering!

FAIRBANKS-MORSE

After the war, the name Fairbanks-Morse will continue to mark performance-proved products only, as it has for 114 years.

No race to get civilian products onto the market early will tempt us to break this pledge.

★ ★ ★

Fairbanks-Morse Scales are precision-built instruments which provide mechanically perfect weight recording. Of sturdy scientific construction without springs or delicate parts, the countless types, styles, and modifications serve American business and industry by keeping books, records, and inventories, saving time, preventing errors, and speeding production.

BUY MORE WAR BONDS

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A New Art

OF FORMING FORMICA SHEETS

War production has resulted in the development of new ways of forming completely cured Formica sheets. This method is highly successful commercially and at North American Aviation where Plastic Engineer William Beech developed it, many parts shaped in this way, are in regular production and use.

Sharp bends can be made in the material without fracture. The inside diameter of the radius may be no greater than the thickness of the material. The method is simple and fast—in every way efficient from the production point of view.

Formica so formed will not dent or deform under ordinary blows. It maintains its new shape under all conditions of humidity and climate. The parts are permanent, substantial and efficient.

This method of shaping Formica will adapt it to many new uses in textile equipment. Leading manufacturers are working out the applications now for after-the-war use.

THE FORMICA INSULATION COMPANY
4618 Spring Grove Ave., Cincinnati 32, Ohio

ARMY E NAVY

FORMICA

THE TECHNIQUE

Formica sheets are heated in an oven to a temperature somewhat higher than that at which they are cured—just under the blistering point. Then they are quickly inserted in a press with wooden or "Pregwood" forming dies and stamped into shape. When cold, the shape is permanent.

ON THE FIGHTING FRONTS!
ON THE PRODUCTION LINES!

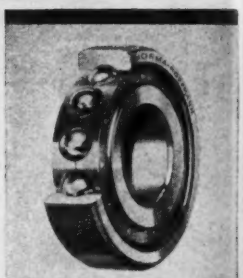
The PRECISION BEARINGS here pictured, together with many others from the comprehensive NORMA-HOFFMANN line, have literally "gone to war" for the Allied Nations.

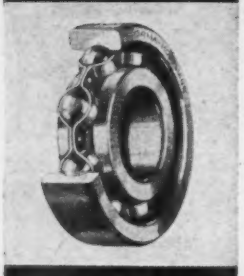
On the fighting fronts, they are "in the service" in every type of naval craft, from patrol boat to battleship—in bombers, fighters, scout planes, trainers and transports—in guns, tanks, mobile artillery, military transport and supply equipment.

On the production lines, NORMA-HOFFMANN Bearings are in thousands of machines, machine tools, and other vital mill and shop equipment that are turning out ships, armament and indispensable war materials for the American and Allied forces.

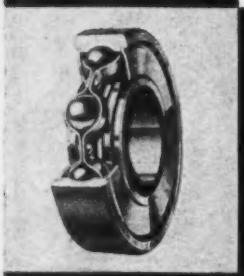
Let our engineers work with you.

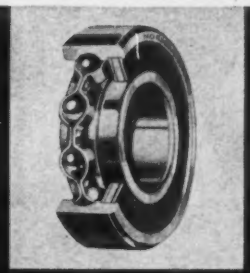
Separable (Magneto) Ball Bearing

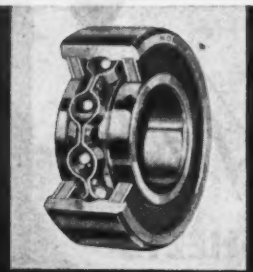

Litro ("CL") Composition Retainer Ball Bearing


Single Row Ball Bearing

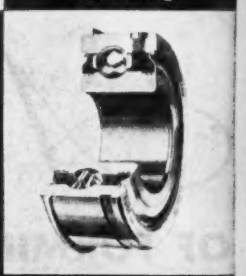
Double Row Self-Aligning Ball Bearing


Shielded Type Single Row Ball Bearing

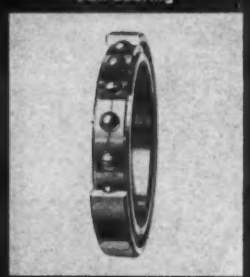

Single Felt Seal Ball Bearing

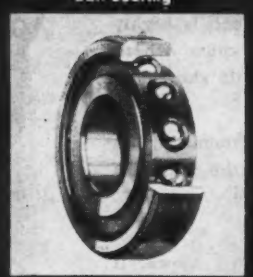

Double Felt Seal Ball Bearing

9000 Series (Feltless) Sealed Ball Bearing

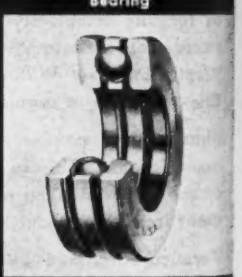

"Cartridge" Fully Sealed, Refillable Type Ball Bearing

Double Row Ball Bearing


Extra Light Type Ball Bearing


Angular Contact Ball Bearing

Extra Light Single Direction Ball Thrust Bearing


Single Direction Ball Thrust Bearing

Standard Cylindrical Roller Bearing

Type "E" Cylindrical Roller Bearing

Full Type (Retainerless) Cylindrical Roller Bearing

Extra Light Cylindrical Roller Bearing

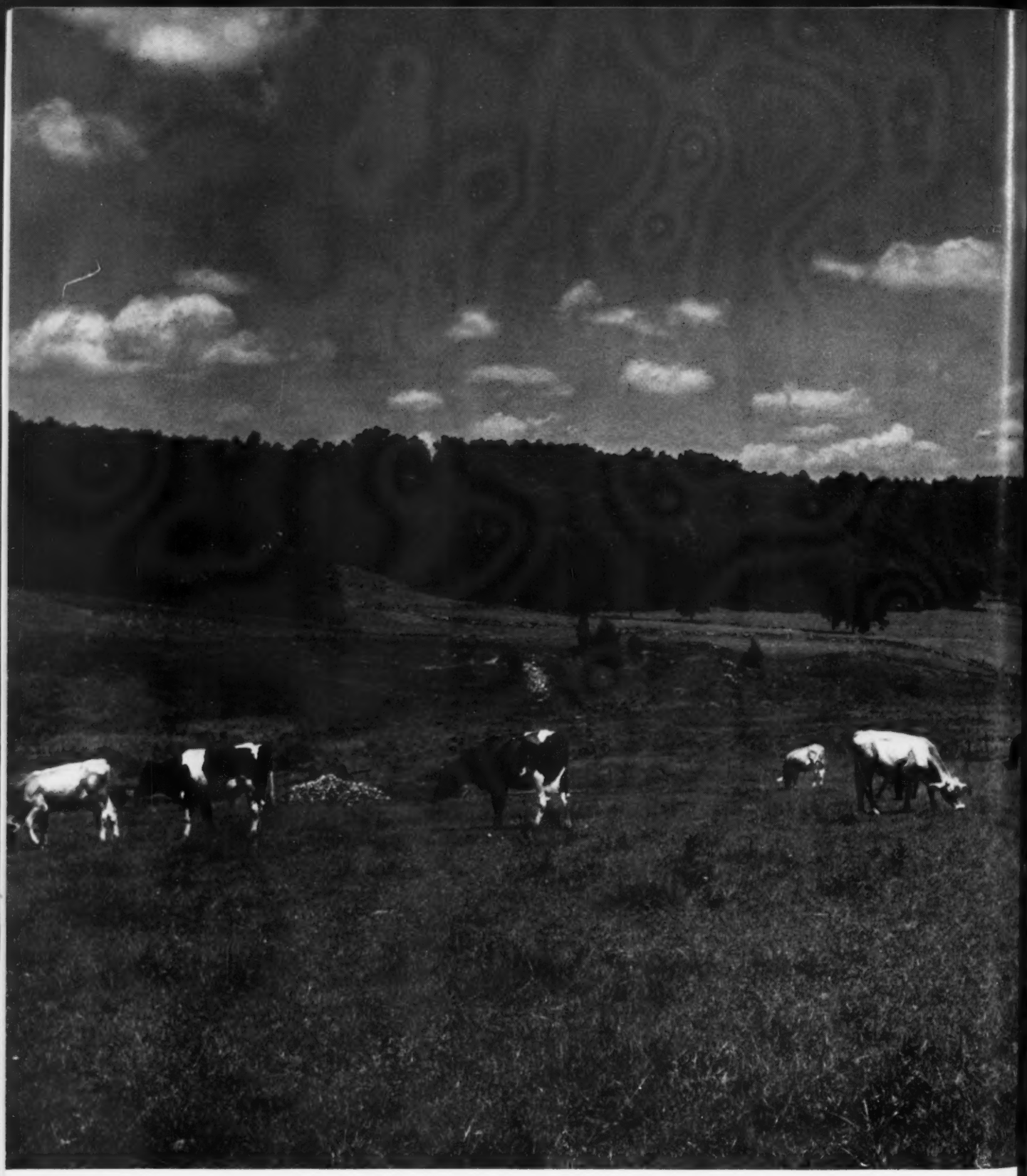
Two-Lipped Cylindrical Roller Bearing

NORMA-HOFFMANN BEARINGS CORP'N, STAMFORD, CONN., U. S. A. • FOUNDED 1911

TO WIN THE WAR: Work — *Fight* — Buy War Savings Bonds

Exciting Exposure . . . Legs clothed in clear, even-textured, full-fashioned stockings are truly exciting. Every stocking manufacturer knows that good needles are the best safeguard for better fabrics and bigger profits in full-fashioned knitting. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.



"If every man stuck to his talent, the cows would be well tended

J. P. DE FLORIAN

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing. Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

Our POSTWAR WORLD STARTS Today!

• Many Hartex products are today important factors in the processing of newly-developed synthetic fibers. Our chemists, with an eye to future needs, are working on still other products which will help create *new* and *different* fabrics. We are also developing new applications for those well-known processing-agents which have made "Hartex" history. With readiness to serve in the era just at hand, there has been no let-up in our day-by-day interest in the requirements of your industry in a war world.

- *Consult us regarding your present problem*
- *Consult us regarding your postwar program*

HARTEX PRODUCTS

CARO-GANT: A perfectly balanced compound for cotton warp sizing. Contains no water, metallic salts or unsaponifiable fats.

KOPAN: A permanent cellulose finish suitable for sheets, rayons, marquisettes, damasks, shirtings and many types of knitted and woven fabrics.

PIGMENT COLORS: Special concentrates in all shades for use with KOPAN. Also special water-dispersed pigments for use with various binders for printing and dyeing.

DYPENOL: The ideal mercerizing penetrant. Completely eliminates boil-out or wet-out, with attendant savings in labor, steam and chemicals.

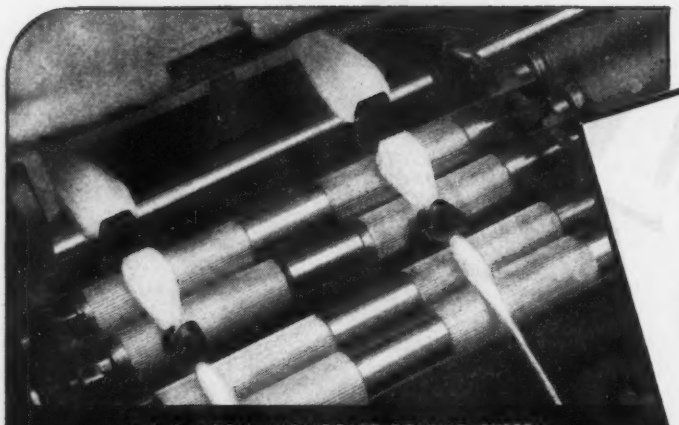
REPELON: A highly efficient single bath water-repellant agent; very stable, readily soluble. Meets government specifications for military fabrics.

CATYLON: A cation-active finishing agent which is permanent in its softening effects. Complete range of formulae to meet all special requirements.

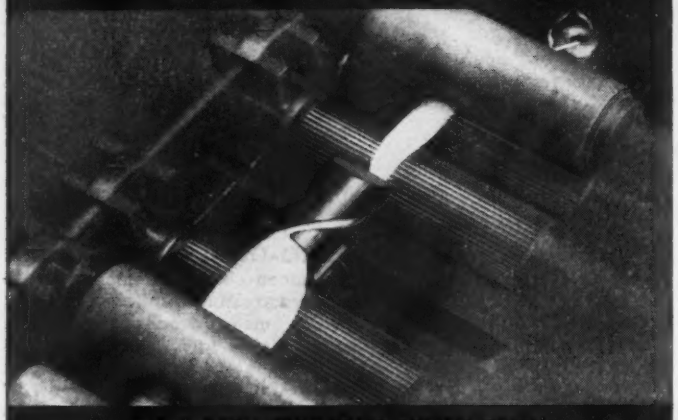
HART PRODUCTS CORPORATION

Chemicals for Every Phase of Textile Processing

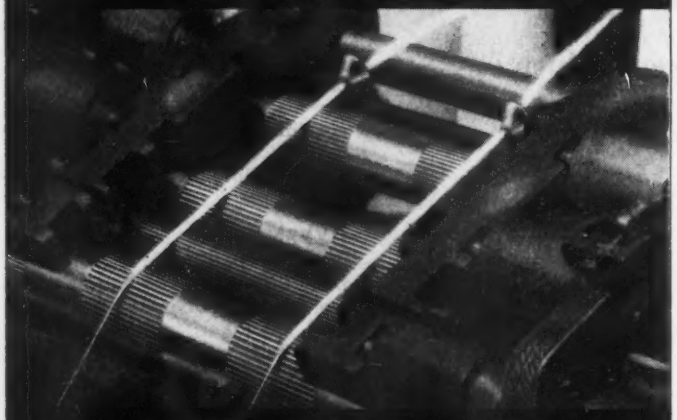
1440 BROADWAY • NEW YORK, N. Y.



H & B 4-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER



H & B 5-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER



H & B 4-ROLL HIGH-DRAFT SPINNING SYSTEM

PUT THESE *on Your Victory List*

WHEN victory comes many mills will have to replace worn out equipment. Others will have to modernize, regardless of the condition of their equipment, in order to put costs on a competitive basis. Not all these mills can be taken care of at once. The demand for new machinery will be greater than the supply for several years.

Start a "victory list" now of the new equipment you will need and consult with us regarding your requirements so we can put you on *our* victory list.

A good way to put your spinning department on an efficient, low cost basis quickly and with a comparatively small investment is to install H & B High-Draft Roving and Spinning. These systems can be supplied complete with new frames or can be adapted to any make of standard frame. Change over installations require a relatively short time and the cost is surprisingly low.

Upkeep and maintenance are also low because the systems are SIMPLE, — no belts, easy to clean, easy to operate and readily adjusted, while the quality of the product equals that of any other system on the market.

Power savings will also be important, because of the great reduction in the number of spindles required.

Ask our nearest representative to call.

H & B AMERICAN MACHINE COMPANY

PLANT AT PAWTUCKET, RHODE ISLAND

BOSTON OFFICE: 161 Devonshire St.: ATLANTA OFFICE: 815 Citizens & Southern National Bank Bldg.: CHARLOTTE OFFICE: 1201-3 Johnston Building
EXPORT DEPARTMENT: United States Machinery Co., 115 Broad St., New York, U. S. A.

Which of these 5

GATES V-Belts

Best Fits *YOUR* Needs?

Your GATES RUBBER ENGINEER Can Tell You.

Phone Him TODAY!

Whenever a drive in your plant gives you the slightest trouble, it is a good plan to phone the Gates Rubber Engineer. He is a specialist who makes a business of improving drive operation.

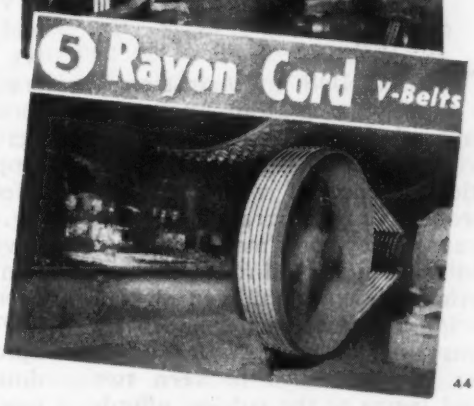
For example, you may have a drive that appears to be wearing out belts faster than it should. In most cases the Gates Rubber Engineer can correct the difficulty quite easily and will find no need for you to adopt belts of any special construction.

At times, however, he will find conditions under which a V-Belt of special structure can most profitably be used—and he can then supply a Gates V-Belt that is precisely engineered to meet the unusual conditions.

The Gates V-Belt of special synthetic rubber is a case in point. For more than 6 years now, Gates has been supplying industry with many thousands of these belts. Under severe conditions of heat and oil, the Gates special synthetic belt actually outwears any natural rubber belt by as much 230%.

In your particular application, V-Belts with tension members composed of flexible steel cables—or of rayon cords—may prove to be the most efficient and economical. Again, Static-Safety V-Belts may best fit your special need.

In any case, the wisest move you can make is to phone the Gates Rubber Engineer. (Just look under "Gates Rubber" in your phone book.) He will come right to your plant—will thoroughly analyze any drive problem you may have—and he will always recommend the practice that will be most efficient and economical for you.



THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

4410

GATES VULCO ROPE DRIVES

CHICAGO, ILL. 549 West Washington
DALLAS, TEXAS 2213 Griffin Street
NEW YORK CITY 215-219 Fourth Avenue
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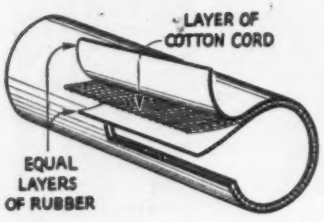
DENVER, COLO. 999 South Broadway
CHARLOTTE, N. CAROLINA 605 West Fifth Street
GREENVILLE, S. CAROLINA 108 W. Washington Street
ATLANTA, GA. 738 C & S National Bank Building

LONG WEARING!



THOUSANDS of Armstrong's Accotex Long Draft Aprons, in continual service on spinning and roving frames for three years, show little evidence of wear! Accotex Aprons give this extra-long service because they are made of non-oxidizing, highly oil-resistant synthetic rubber—reinforced by a special construction developed by Armstrong. A sturdy cord interliner is sandwiched between two equal layers of the rubber, affording a substantial wearing thickness on both the inside and outside of the apron and preventing loss of efficiency due to stretching in operation.

You get cleaner running work and less waste when you use Accotex Aprons, because they do not crack or scuff. They draft uniformly, because they exert positive "grip." Accotex Aprons reduce lapping, too, since they are not affected by temperature or humidity. The continuous construction never breaks open. All these advantages last for the full life of every Accotex Apron.

For more information about the apron that lasts longer than ordinary types — that consistently produces higher quality yarn—see your Armstrong representative. He'll be glad to give you details and free samples of Accotex Aprons. Or, write Armstrong Cork Company, Textile Products Department, 8310 Arch St., Lancaster, Pennsylvania.

ARMSTRONG IS HEADQUARTERS FOR

Roll Coverings, Long Draft Aprons, Roll Shop Equipment and Supplies, Loom Clutch Facings, Friction Let-off Strips, Brake and Clutch Inserts, Temple Rolls, Loom Bumpers, Preformed Cork Cones, Friction Drive Wheels, Spindle Washers, Winder Spindle Head Covers

ARMSTRONG'S ACCOTEX APRONS

CORK • COTS · ACCOTEX COTS

The Economic Reconstruction of Europe

THE time is fast approaching when allied and enemy populations alike will demand a blueprint for the economic reconstruction of Europe. The peace plans following this World War will be written piecemeal, and by experts, at a series of continuing conferences, such as Hot Springs, Bretton Woods, Dumbarton Oaks and Quebec, each tracing a new pattern for negotiation and each dealing with a single, specific problem. In the drawing of these plans, the United States, as owner of more than half of the world's industrial capacity, controller of the only great credit reservoir, and possessor of the largest force of highly skilled technicians and management engineers, has heavy responsibilities which its industrial, financial, agricultural and labor leaders cannot evade.

☆ ☆ ☆

Just what is the problem which the world's business leaders must help solve in Europe?

The best safeguard of peace is economic opportunity—a good chance for all peoples to raise their standard of living by their own ingenuity, foresight and industry.

Frustrated and disappointed peoples, who view the future with misgiving rather than hope, breed fanatical demagogues who seek to divert nations from their ills and disappointments by promising military glory and conquests.

Consequently, an important step in building a secure and lasting peace is to open the doors of opportunity to the peoples of Europe.

The greatest obstacle to opportunity in Europe has been economic nationalism.

The economic tradition of the Continent always has been highly nationalistic. The national feeling generated by the first World War, and the political autonomy conferred upon many peoples by the peace treaties, led to a great growth of economic restrictions. This trend was accentuated by the depression and by the military plans of the Fascists and Nazis. Hitler had to show his people they could be fed even if a blockade was imposed again. The inevitable result of these influences was to carry self-sufficiency to tragic extremes.

Economic nationalism holds down the standard of living of Europe in two ways:

1. It prevents the rise in most European countries of low-cost mass production.
2. It operates against an efficient geographical division of labor, preventing nations from doing what each can do best.

Great machines require great markets. One great machine of which the United States has many and Europe few is the continuous strip steel mill. At the outbreak of the war we had twenty-eight such mills of various sizes, England but one, and Continental Europe one. A building containing one of these machines is more than a quarter of a mile long and the minimum cost of the mill is almost $25,000,000. Only the prospect of a mass market justifies production on this vast, but highly economic basis.

The wasteful geographical distribution of production is shown by the agricultural policies of Italy, France and Germany.

In the 1930's, when lard sold for less than 8¢ a lb. in the United States, it cost 32¢ a lb. in Germany. In Italy and Germany imports of wheat were banned and its production at home was heavily subsidized. By the middle of the 1930's, wheat sold for $1.55 a bushel in France, $1.97 in Czechoslovakia, $2.29 in Germany, and $2.47 in Italy. At the same time the United States and the other efficient world producers and exporters (Canada, Australia and Argentina) were *restricting* production and were unable to average more than about 75¢ a bushel for their wheat.

Economic unity in Europe must ultimately mean a freedom to trade not greatly different from what we have within the United States. Given economic unity and the large markets which go with it, efficient mass production will develop. With Europe receiving cheap supplies of such staple foods as wheat, pork, lard and dried fruits from overseas, European farmers can prosper by specializing in producing fresh foods—butter, cheese, eggs, fruits, vegetables.

Then European agriculture will be more prosperous producing its specialties, and our agriculture (and that of the other great efficient surplus-producing countries as well) will have greatly expanded markets for our staples.

With a cheaper food supply for Europe—yet one yielding a better price for our agriculture—European labor will live better. Labor now used uneconomically for agricultural production will be released for industry. With big machines and semi-automatic processes European labor can produce more steel, automobiles, furnaces, plumbing and electrical appliances to advance its standard of living in coming decades, as the United States has done in past decades.

A rising standard of living in Europe will bring

Europeans to view peace with optimism and hope. And world trade grows as confidence and prosperity widen.

☆ ☆ ☆

How would a Europe which possesses economic unity appear to us on this side of the Atlantic?

It would be a prosperous Europe that would have strength in its advancing industries, but as the single great agricultural deficit area of the world, it would be dependent upon overseas supplies for vital agricultural staples. This dependence upon overseas agricultural supplies would be greatest for industrial Germany. Some people believe that a strong Europe would be a threat to world peace. More important, however, is the fact that a strong and prosperous Europe would not be a frustrated Europe. It would have found a way to achieve a rising standard of living. Furthermore, a prosperous Europe would, economically, be a dependent Europe because, although the European industrial worker would use more and cheaper food, he would have it only as long as he maintained the peace.

A prosperous Europe would be of special advantage to American agriculture (if we do not keep on pricing ourselves out of the market) and of great advantage to American industry.

The British policy of buying agricultural staples from abroad, for example, made her, a nation of only 45,000,000, the purchaser, in 1937, of $250,000,000 of all kinds of agricultural products from the United States. In the same year the rest of Europe (exclusive of Russia), with a population of 325,000,000 purchased only $300,000,000 of our agricultural products. But with more sensible organization of its agriculture, Europe could be expected to buy more than one billion dollars of agricultural products from us.

By far the greatest market for an expanded European industry will be Europe itself.

For American industry, there will be growing markets in Europe as industry expands. Experience shows that the trade between different highly industrialized areas is large. This country's biggest export markets have been with its keenest competitors—Britain, Canada, Japan, France and Germany.

Before the war, Europe, with two and one-half times the population of the United States, had only one-sixth as many automobiles.

If Europe (exclusive of Britain and Russia) were to motorize proportionately, it would need 75,000,000 automobiles. With normal depreciation this would ultimately mean 10,000,000 cars to be produced annually to replace worn out cars.

If one still wonders about the immense number of things Europe might produce *for herself*, let him calculate the highway expenditures, the filling and repair station businesses that must be equipped and maintained; and the doubling of the steel production that would be required to make the automobiles themselves and to reinforce with steel even a moderate amount of additional concrete highways.

Another example is the electrification of Europe. With two and one-half times our population Europe's consumption of electrical energy would be 175 million electrical H.P., if the European worker were to have the advantage of as many H.P. as the American. Yet, just prior to the war, Europe's installed operating capacity was only about 40 per cent of this figure.

☆ ☆ ☆

What has been sketched for Europe is actually much more nearly a page from the economic history of the United States than it is mere prophecy about a desirable future for a Europe at peace. But how can it be achieved? And what is our part to be in helping to bring it about?

Economic unity can be provided for the sovereign states of Western Europe by the peace treaty or treaties adopted at the end of the war. The provisions for securing *economic unity* in Europe should specifically cover:

1. Substantial freedom for persons and enterprises to do business anywhere in Europe.
2. Reasonably free movement throughout Europe of persons for employment, recreation and education.
3. Greatly increased freedom of trade:
   a. Within Europe—through the application of a Europe-wide agreement reducing the tariffs among all European countries to a maximum of 10 or 15 per cent.
   b. With the rest of the world—through reduction of European tariffs on goods bought from overseas. This would call for generally lower levels on manufactured goods, and for the removal (after a reasonable period of progressive reduction) of tariffs on all agricultural foodstuffs and most industrial raw materials.
4. A special currency provision requiring as nearly as practicable complete currency stabilization for all countries of Western Europe among each other.
5. Creation of an agency (with adequate revenues) through which all Europe-wide business and other affairs affected by these agreements would be administered for a minimum period of twenty-five years.

This would permit the economic unity of Europe to be substantially achieved. During this period, assistance in administering the provisions would be given by officials of the United Nations.

Near the end of such a period arrangements could be made for a vote in the European countries on whether or not to continue the "unification provisions." If the vote were in the negative, the United Nations would have proper warning that additional safeguards would be necessary to prevent war.

The suggestions made in this statement aim at securing economic unification of Europe and thereby promoting the possibilities of permanent peace in Europe.

The realization of these possibilities throughout the postwar years requires a freely expressed public opinion in Europe to guide all who share the responsibility for bringing peace to Europe and to the world.

James H. McGraw, Jr.

President McGraw-Hill Publishing Company, Inc.

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An illustrated folder giving more detailed information about the pigment-dyeing and finishing of knitted cotton fabrics and marquisette will be sent to all finishing plants requesting it. There is no obligation—write for your copy today! Aridye Corporation is a sales agent for Ceglin.

*Reg. U. S. Pat. Off. †Reg. U. S. Pat. Off. Sylvania Industrial Corporation

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TEXTILE COLORING MATERIALS

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Quartermaster Corps Releases Data on ENEMY TEXTILES

HIGHLIGHTS: Analysis Indicates German Shortages of Wool and Cotton—Use Made of Spun Rayon and of Linen—Japanese Have a Severe Wool Shortage.

By HAROLD E. REED
Assistant Editor, TEXTILE WORLD

LESS SPECTACULAR than guns, tanks, airplanes, and rockets, but just as essential, are the textiles which clothe and outfit an army. As with ordnance materials, which are watched carefully by allies and foes alike, textiles are likewise watched.

Changes in fabrics and in clothing are indicative of economic conditions within a country and also of tentative military plans. The resourcefulness of a nation under conditions of shortages is demonstrated in fiber substitution and fabric design. The data on which the following descriptions are based have just been released to TEXTILE WORLD by the Office of the Quartermaster General, and cover fabrics captured in Africa, Russia, Italy, and the Pacific.

GERMANY NOT PREPARED. Analysis made by the Office of the Quartermaster General of German military clothing, taken from captured personnel, has indicated that Germany was not too well prepared to fight a long battle of Europe on as many fronts and under as varying climatic conditions as those with which she has found herself confronted.

Examination of German uniform fabrics captured in various theaters of the war reveal, with few exceptions, that very little change occurred in fabric quality from 1935 to 1942. In the latter part of this period exceptions began to appear in overcoating material and in sleeve linings. Rayon was mixed with wool in overcoatings in increasing quantities. Also, rayon was substituted for cotton sleeve-lining material.

Extensive use has been made of linen over certain periods of time. However, linen may have been used as a conservation measure for sleeve linings and for trousers for the African campaign, rather than as a substitution, as large quantities of linen became available.

German fabrics, on the whole, appear to be well made. The yarns are of fine count and very evenly spun. However, the Germans have a great many specialized garments and fabrics whereas the U. S. Army has simplified its uniforms to a basic few.

The general German trend over the last several years, that is, since 1942, has been to blend rayon with wool because of a definite wool shortage. Also, rayon has been substituted for cotton, even in such fabrics as duck in some instances. Most rayon used is in staple rather than in filament form. Linen and bast fibers are used whenever possible.

Germany has drawn upon the occupied countries for some of its textiles. Trousers bearing markings of "made in Amsterdam" have been captured. Also, it has been revealed that clothing shipped to German war prisoners was made from cloth taken from the mills of France.

Some of the German clothing, notably the camouflaged items, as illustrated above, used in the Italian campaign, were improvised in the field. Many pieces such as jackets, jumpers, trousers, etc., were made in the field from shelter-tent halves. This indi-

cates how poorly equipped the Germans were as to specialized clothing to meet exacting battle conditions.

WINTER CLOTHING. Prior to 1942 the German winter uniforms consisted in part of the standard overcoat made of 13.8-oz. material. During the first winter attack on Russia, the German soldiers found their winter clothing woefully neglected. The first attempt to provide needed clothing was the addition of a woolen lining consisting of 68% wool and 32% rayon. This black, sleazy fabric consisted partly of reworked wool with some vegetable fiber, and weighed 14 oz. per sq. yd.

The German overcoat fabric had a specific gravity of .39, which indicated that it had very little of the nap and loftiness required to make it sufficiently warm.

These developments indicated that Germany was entirely unprepared for the Russian campaign and for fighting in cold-weather climates. Sweaters, vests, and other makeshift items had to be used.

The winter of 1942 found the Germans better prepared to conduct a winter campaign, although their specially-designed uniforms were still inferior to those of the Red Army.

Samples of the captured German winter uniforms consist of a lined parka and trousers which are a gray-green on one side and a white on the other side. The layer principle is employed; a gray-green layer, a layer of white, both rayon, and an interlining of woolen cloth napped on both sides. This interlining consists of 38% wool, while the wool content for the entire uniform is about 15%; the remaining content being rayon.

To make the uniform windproof, the rayon fabrics were made comparatively thick, hence a limitation on the thickness of the wool interlining is necessary to keep the uniform weight within reason. The uniform, consequently, is not especially windproof and has very poor insulating qualities. Heat losses through the entire uniform, according to Russian reports, amount to 1,364 calories per hr., whereas losses through the Russian quilted suit are as low as 800 calories per hr.

The outer layers of cloth weigh from 8.5 to 9.1 oz. per sq. yd. and are woven of plied viscose rayon yarns. Fabric construction is 80 x 65, and the fabric is woven to produce a linen-like effect. Fabric strength is about 30 to 35% less than a corresponding cotton fabric, and has a wet strength of about 50% less. Yarns are spun on the cotton system from staple about 2-in. in length.

Reversible toques, mittens, sweaters, pile vests, and jackets complete the winter uniform. The toque is worn under the helmet; and the helmet, in turn, is covered by the hood of the parka. Mittens are reversible, a woolen overcoat-type of cloth being used for the gray-green side. No interlining is employed.

A German on the Russian front using a mosquito netting for face camouflage. Illustrated is the cover of the January 19, 1944 issue of Wochenschau, a weekly picture paper published in Germany.

AFRICAN CLOTHING. Several different types of jackets were used by the Germans in the African campaign. One type of garment is of heavy cotton twill, and has shown little change from those made in 1940 and 1941.

A type fatigue jacket, marked 1942, is made entirely of linen. This garment appears to be cut more according to commercial standards than military standards. No pockets appear on the front, but an inside patch pocket is used. No provisions are made for epaulets. It appears that the garment was dyed with a direct dye after manufacture or in the field.

A companion item, likewise captured, was linen trousers. These had, however, been vat dyed.

Other trousers used are of cotton. These compare favorably to ours but, like most items of German clothing, require much more hand labor in fabricating.

An interesting item of wear—cotton net underdrawers made of tricot-knit fabric were utilized for desert wear. The fabric, knitted with two-bars, contains 10 wales and 22 courses. Yarns are a blend of cotton and rayon, and plied to form a 34/2 yarn.

The net underdrawers do not compare favorably with the broadcloth shorts issued the U. S. Army Quartermaster because the tightly knitted fabric is composed of relatively high-

Press Association, Inc.

These young German prisoners were captured on the first day of the campaign near Anzio, Italy. Uniforms show the results of wear and tear encountered under battle conditions. These uniforms are not nearly so suited to such conditions as the standard battle dress issued our troops. Young boy in center is wearing a special garment.

twist yarns that would not produce the desired absorption required in hot weather. Also, the fabric would have a tendency to chafe the wearer's skin.

It is of interest to note that many of the captured uniforms had been patched and repaired in the field. On some of the earlier models marked 1935 and later, the patching material matched closely the color and material used in the original garment. This indicates that very little change has occurred in fabric construction and that there has been little fabric degradation over this period of time.

Mosquito headnets issued to troops also serve as camouflage. The German nets, unlike the U. S. Army headnets which are held away from the face of the wearer, are in contact with the face and neck. Consequently insects may bite through in these spots. While the U. S. Army uses marquisette or tricot, the Germans use bobbinet of about 360 meshes per in., and made of 140-den. viscose rayon. Breaking strength is about one-third less than ours. Meshes of the German product are relatively open, and are of protection only from mosquitoes and larger-size insects.

Extensive use has been made by the German Army of insect bars on practically all fronts, especially on the Russian front, as a protection against malaria that is spread by mosquitoes. Two types are used. One type of bar, captured on the African front, is used over a cot, or bed. This bar is of cotton bobbinet, unbleached, and has 196 meshes per sq. in., as compared with 676 meshes found in our bars. While the German bar is unbleached, ours is OD and is mildewproofed.

The second type of insect bar is a type of a tent set directly on the ground. This insect tent accommodates two men. It is woven of 150-den. rayon on a 12-pt. Levers lace machine. The fabric weighs 2.1 oz. per sq. yd. and has 226 meshes per sq. in. Color is OD No. 7 for camouflage purposes; netting has not been treated for mildew. This fabric has a breaking strength of 7 lb. warp and 12 lb. filling, as compared with the U. S. Army cotton marquisette netting which breaks at 28 lb. warp and 20 lb. filling. Increasing use of nylon insect bars is being made by our troops, and these break at 50 lb. for both warp and filling. Mesh size of the German netting is so large that protection would be furnished against mosquitoes only, and not against the sandfly and other minute tropical insects.

FABRICS FROM ITALIAN CAMPAIGN. Considerable amount of camouflaging of uniforms by the Germany Army was carried out in the Italian field, as indicated by the improvised camouflaged clothing captured near Anzio in June, 1944, and shown on page 83.

Materials used for making some camouflaged jackets and trousers, as illustrated, has been shelter-half fabric, which has been tailored by the unit or field tailor. These shelter halfs, when attached together, make a tent to accommodate two soldiers in the field;

Ventilation openings similar to that shown are not permitted in U. S. uniforms because they do not provide proper protection to the wearer.

this material is generally camouflaged, has a very high resistance to wind, and is superior to many high-grade domestic materials. Fabric construction is as follows: 93½ x 67, 8.7 oz. per sq. yd., warp and filling about 30/2 cotton yarns, and of plain weave.

Italian shelter half, from which some clothing was also made, is of poorer quality, with relatively low tear and breaking strength; however, it is good from the standpoint of its windproof qualities.

The Luftwaffe has always been supplied with the best of everything. Even the wool content of its trousers has been higher than that of the trousers used by the ground forces. Wool content in 1942 was 100%, but in 1943 it had dropped to 59%. The substitution of rayon for wool, and also of rayon for cotton pocketing, indicates a shortage of wool and of cotton inside Germany. On the whole, fabric quality of woolen trousers has showed a gradual decrease.

Another interesting item of captured German equipment is a towel made entirely of linen. The fabric, 45 x 41, weighs 10.3 oz. per sq. yd., is woven in a fancy checked pattern, and is of very good quality.

EXTENSIVE USE OF RAYON. The Germans have made extensive use of rayon whenever possible to conserve the fast-dwindling supply of wool and of cotton.

For example, the webbing which forms some of the straps for holding the rolled overcoat on the rusksack, or haversack, is composed of cotton, rayon, and linen. The bread bag, which also serves as a carrier for the mosquito headnet and other small necessities, is a 66 x 33, 13.69-oz. fabric composed of spun viscose-rayon warp and filling, with two warp ends woven as one in a plain weave.

Some German rusksacks are made with a spun-rayon outer fabric. But our haversacks are made from heavy cotton duck. The 14.43-oz. rayon fabric is of 67 x 33½ construction woven in a plain weave with two warp ends woven as one. Yarns are two-ply; the fabric is vat dyed a drab blue shade. Such uses for rayon would not be considered by the U. S. Quartermaster because of the superiority of cotton fabrics.

ABSENCE OF FINISHES. Water-repellent, mildewproof and fireproof finishes

Uniforms similar to the above were used by the Jap Army in New Guinea.

Navy shorts and shirt captured in Marshall Islands are of poor quality.

are remarkably absent from most German fabrics. Most duck for kit bags, tents, and other purposes lacks water-repellent finish. A starch finish has been applied to some duck items, such as the kit bag.

Extensive use of sulphur dyes on many cotton items indicates a shortage of vat dyes, or the inability of some mills to handle such work.

JAPANESE COLD-CLIMATE UNIFORMS. The Japanese have shown some originality in the development of a number of uniforms intended for use in Manchukuo and the Aleutian Islands. The originality is in utilization of available materials and not in production of a fabric or a garment having superior qualities.

It is apparent that Japan has a severe wool shortage. Use of 8.32% wool; 15.8% cotton, and 75.88% rayon in a Japanese blanket made in 1943, is indicative of this situation. Blankets of previous manufacture contained from 30 to 50% wool. This blanket was captured in New Guinea and was of the same appearance as those found on Attu, indicating that a wool shortage, rather than special design, was responsible for its use in different climatic zones. The wool content in certain overcoats in 1939 was 100%. Samples manufactured in 1940 had 40% wool, in 1941 had 61% wool, and in 1942 had 70% wool. Cotton was used for the remaining percentage.

HEELLESS SOCK. A sock having no heel is being used by the Japanese. The sock is made on a 60-needle automatic sock machine and knitted perfectly straight without shaping. A 2 x 1-rib cuff top is used with the leg and foot being knit plain with two ends of single woolen yarns. Toe is shaped with a gore reinforcement on a 2-thread looper.

While this sock will fit any size foot, regardless of shrinkage, and would be slightly faster in production, such items as comfort and durability make it wholly unsuited to American needs. Fiber content is about 75% wool of 50s grade and about 25% cotton.

MULTIPLICITY OF FABRICS. Japan takes the prize for using the greatest number of different fabrics in a single garment.

One coat intended for cold-climate wear utilizes a cotton-face fabric; a cotton lining; a linen interlining; a quilted padding of cotton cloth, silk wadding, and paper; white rayon pile; wool pile; dyed rayon pile; and rabbit fur. The next might be made of completely different materials.

Try to beat that coat for a combination!

The coat, a ¾ length, weighs 6 lb., 13-oz., and is made of water-repellent cotton cloth with fully lined, detachable sleeves. Face cloth is fairly resistant to wind, having a Gurley rating of 87.2 sec. Fabric is 78 x 68, 7.7-oz., and is of plain weave.

Of interest is the quilted padding, having a combined weight of 22.5 oz. per sq. yd. Garnetted silk waste and rice paper are quilted between cotton sheeting in 3¾-in. blocks to give insulating value with little added weight to the garment.

A fabric with wool pile, ½ in. in depth and 192 tufts per in., is used for the collar. The body of the coat is quilted and the lower 14 in. are lined with a fabric with woven rayon pile, ¾-in. in depth and with 300 tufts per in.

Top half of the sleeve is lined with rabbit fur, while the detachable portion of the sleeve is lined with rayon pile. Cuffs are lined with wool pile. Vents and side openings are provided in the coat. Such openings, found on many other Japanese garments, show that complete protection for the wearer has not been considered.

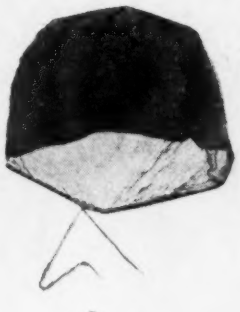
A knitted rayon pile fabric has been used by the Japs as a lining for gloves.

Quilted pants are used by the Japs in cold climates for additional protection. These are knee length and are held up by straps. The quilted portion consists of silk and rice paper, as described previously.

JAP TROPICAL TEXTILES. Cotton textiles are employed extensively for equipment in tropical zones by the Japs.

Shorts are frequently used by the Navy, but not by the Army in the Southwest Pacific area because of lack of protection against insects. Cotton trousers and shirts, the standard Jap uniform, are made from a good quality cotton fabric which has over the last several years increased in breaking strength. This fabric compares favorably with the U. S. Army 9-oz. sateen. Its strength is greater than the herringbone twill used by our troops in the tropics, and offers greater protection against insects, but is considerably hotter.

Light-weight cotton fabrics are also used by the Japs for trousers and for shirts. Such fabrics are lighter than any used by the U. S. Army, and consequently, they do not offer sufficient protection to the wearer.



Mosquito headnets of bobbinet are issued with the standard German tropical uniform.

This German jacket of 8.2-oz. camouflaged shelter-half material is of 94x57 construction and has a Gurley rating of 468.2 sec.

The German trousers shown were captured near Anzio, Italy. Also of camouflaged shelter-half material, but of a lower grade.

BONDED-FIBER WEBS
Short-Cut Mill Operations

HIGHLIGHTS: Three types of "Unwoven Cloth" Being Manufactured—Materials Have Variety of Uses—Cotton Principal Fiber—Webs Formed on Conventional Machinery—Cross-Laying Still Being Developed.

By C. W. BENDIGO
Assistant Editor, TEXTILE WORLD

EFFORTS to produce fabrics without resort to spinning, weaving, or knitting have resulted in at least three classes of material which are currently being marketed. These materials have been variously described as unwoven cloth, unwoven sheeting, and nonwoven fabric; but none of these terms describe this new class of material as well as the term "bonded-fiber web," which is recommended by the TEXTILE WORLD editors as a generic term. The term "bonded web" might be considered as a short form of the more nearly correct title.

Interest in bonded-fiber webs has been particularly keen because of their threat to spinning and weaving, and because of their promise to expand the uses of cotton, as well as other fibers. The three general types of bonded-fiber webs which are currently being marketed might be thought of as (1) webs bonded by means of chemical action, (2) webs bonded by means of extraneous adhesives, and (3) webs bonded by means of thermoplastic fibers. The materials produced commercially to date more nearly resemble paper, wadding, or felt than they do cloth. Their chief claim to inclusion in the textile field is that they utilize textile raw materials as well as some conventional textile processing equipment.

In all three processes, a variety of fibers can be used; but so far cotton is principally employed. This cotton goes through the usual opening, cleaning, picking, and carding operations, much as if it were to be spun into thread. When the web has been formed, however, the cotton can be bonded. At times, this occurs as the web is formed on the card, but there is nothing to prevent drawing the fiber on the conventional drawing frames and on ribbon lappers, or even in combing the fiber, before the web is bonded. At the present time the card web is principally used; but if need arises for bonded-fiber webs of higher strength or for more nearly perfect paralleling of the fibers, or for the removal of short fibers, additional conventional textile processing operations might be used.

BONDING METHODS. The bonding of the web by means of chemical action very closely resembles the manufacture of paper. A chemical is applied to the prepared order to cause the fibers to adhere to each other, and then in subsequent processes all of the chemical is removed so that the final sheet contains only pure cotton. Such a product can be varied so that the feel or hand can be soft, moderately stiff, or hard. An example of such material is Bonlinn, which is manufactured by Chicopee Mfg. Corp. and can be seen in Fig. 1 below.

The bonding of the web by means of an adhesive might also be thought of as a chemical action, but in this class of bonded-fiber webs the adhesive is not removed but remains on the product. Such adhesives, according to the well-known Goldman patent, are printed on the wet web by means of rolls similar to those used in roller printing of cloth. The adhesive can be clear or uncolored so that it can scarcely be detected, or it can be colored for decorative effect such as can be seen in Fig. 1. The binding usually occurs across the material every $\frac{3}{8}$ in. to $\frac{1}{4}$ in., although the spacing is determined somewhat by the staple length of the cotton, in order to insure that virtually every fiber in the web is bound down. Binding agents might be starches, gums and resins, or even thermoplastics (not to be confused with thermoplastic fibers). The binding agent applied is governed by the use of the final product. An example of this type of material is Masslin, which is also manufactured by the Chicopee Mfg. Corp.

In the foregoing there was mention

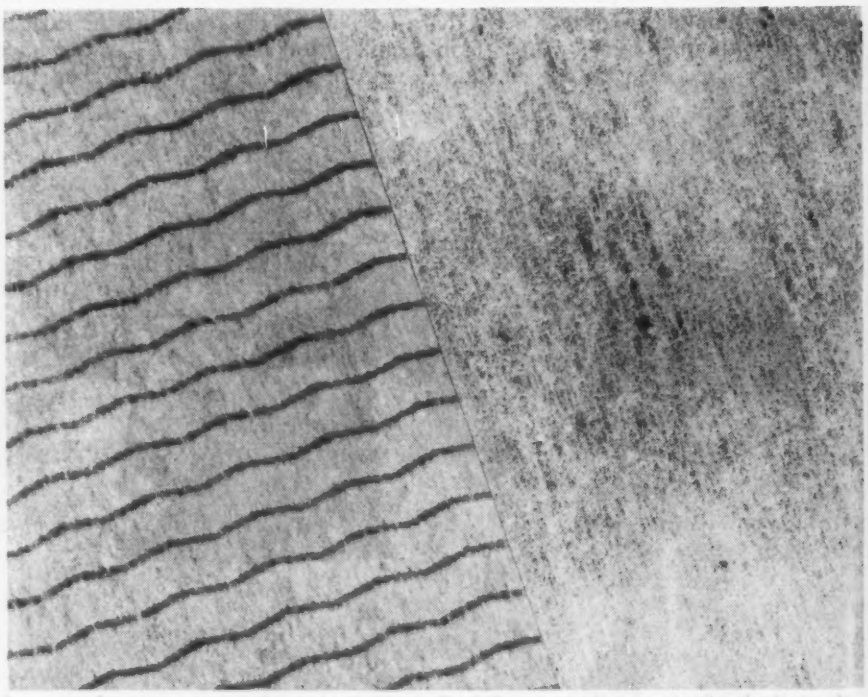


Fig. 1. Right, "paper-like" Bonlinn; left, Masslin with colored adhesive which shows how binder is used. Both Chicopee products.

of the use of thermoplastics for binding the webs. The most common web of this type utilizes thermoplastic fibers blended in the web. Such thermoplastic fibers might be cellulose acetate, vinyon, or others. The thermoplastic fibers are mixed with the other fibers, such as bleached cotton. The mixtures are carded and a number of card webs are combined to form a bat. The bat is then put through a specially designed calender which softens the thermoplastic fibers and presses them in contact with each other and with the cotton fibers. The proportion of binder to non-binder fibers can be varied from 0 to 100% and the thickness or weight of the bat can be varied. The fibers selected plus variation of heat, pressure, and speed of calendering can produce bonded-fiber webs with a variety of properties. The proportion of binder fibers and non-binder fibers can vary through the thickness of the web to give materials that are harder and stronger in the center, or on one surface, or on both surfaces. Products that have been made vary from thin, tough "papers" to heavy, soft "felts" running 30 sq. yd. to the pound and 1 sq. yd. to the pound, respectively.

Thermoplastic bonded webs are unaffected by water and usually have a high wet strength. The use of a binder in fiber form results in a bond which is discontinuous, resulting in a high porosity, absorbency, and flexibility. When sufficient binder fiber is used, the product is naturally heat-sealing to itself and to other materials. An example of such a heat-sealing bonded-fiber web is a type that is used for tea bags (Fig. 2). Bags are formed by pressing the edges with hot irons. A line of thermoplastic-bonded-fiber webs is manufactured by Kendall Mills under the trade mark Webril.

MANY APPLICATIONS. To date bonded-fiber webs have had a wide range of applications, some temporary and some continuous. The webs are often combined with a gauze (Fig. 3) to form a filter which is used in the dairy, petroleum, and other industries. Laminates of the webs have been found to approximate laminates made from cloth; and development work is still continued in this connection, particularly in regard to paralleling fibers.

Two months ago information was released from the Technical Engineering Department of the Texas Technological College that a coated bonded-fiber web had been developed as an inexpensive substitute for leather. Many other uses for bonded webs are visualized; but virtually none, with the exception of possibly coated fabrics or linings, are for clothing uses. Most uses visualized are industrial.

One of the principal objectives in the further development of bonded-fiber webs is to cross-lay the fibers. Today, materials on the market have reasonably good strength "warpwise" (which is sometimes also called "in the machine direction") but has only about the strength of the adhesive material "fillingwise" (which is also called "across the machine").

Work is continuing on the development of a cross-laying mechanism by the Fiber Products Laboratory, New Brunswick, N. J., and others. Unquestionably, the successful conclusion of this work will greatly enlarge the possible uses of bonded-fiber webs.

It is interesting to note that, for some of the current uses and many of the proposed ones, the length of the staple is of relatively little importance. This might mean an outlet for extremely short-length staple and might even make it, in time, feasible to produce cotton on the basis of quantity per acre, rather than to have production restricted by attempts to get good staple length. Mention has been made here of the use of conventional cotton machinery in preparing webs; but there is no reason whatever why a garnett machine cannot also be used, or why the web cannot be made from many kinds of waste.

Opinions concerning the future of bonded-fiber webs vary from extremely pessimistic to extremely optimistics. The more pessimistic observers consider these bonded webs as merely variations of wadding which has been on the market for many years. Optimistic observers feel that bonded webs might be the ultimate salvation of a large portion of cotton machinery and many cotton growers, while at the same time might result in great production of low-priced cotton materials. In the main, the chief problem appears to be finding uses for the bonded-fiber webs, particularly entirely new uses.

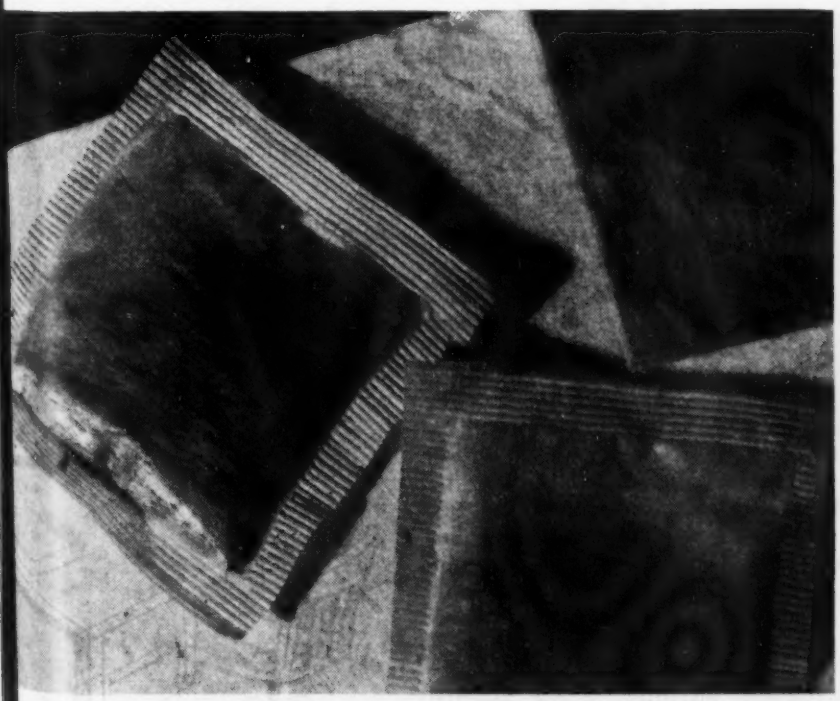


Fig. 2. Heat-sealed, bonded-fiber web used in tea bags is shown on a thick sheet of Webril manufactured by Kendall Mills.

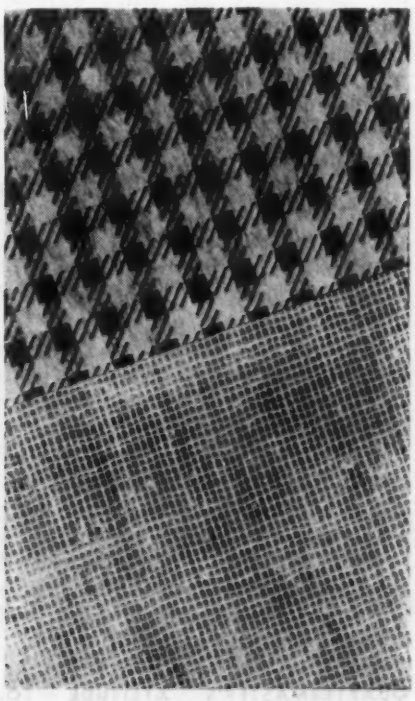


Fig. 3. Reinforced filter web and printed bonded-fiber web.

CONTRACT TERMINATION Procedure for Textile Mills

HIGHLIGHTS: Forms to Assist Mills in Preparing Cost Statements for Termination—Mills May Handle Termination of Subcontracts When Less Than $10,000—Material on Hand May Be Purchased.

WITH THE WAR IN EUROPE fast approaching a climax, contract termination is becoming of paramount importance to those mill men who hold war contracts. Mechanics of handling cancellation have been set up by government procurement agencies; accordingly, mechanics of handling should be set up by the mill to assure a quick and equitable termination.

The following charts, suitable for basic termination work in a mill, are based on those devised by Lyon Metal Products, Inc., and presented by that company to the Army Service Forces and their contractors as a war service. The charts have been kept simple, but broad in scope, to permit their use by practically any type of textile mill, either a prime contractor or a subcontractor.

MECHANICS OF TERMINATION. Upon termination a telegram containing notice of cancellation is received by the manager of the mill's war-contract division. The manager of this division immediately fills out form No. 1, a termination notice, and sends it to all subcontractors and to all departments of the mill handling the war order.

These departments must, within three hours, fill out forms Nos. 2, 3, and 4, which respectively give information as to inventory, location of order and degree of completion, and time spent on the order.

The completed forms are sent to the termination coordinator who checks the forms and supervises the preparation of forms Nos. 5 and 6 by the cost department. Forms Nos. 5 and 6 are sent to the government officer in charge of termination, along with a statement of the amount owed by the government. These forms will assist the government in arriving at a fair and just termination and will permit immediate payment.

QUARTERMASTER'S ATTITUDE TOWARDS TERMINATION. Should a cessation of hostilities occur, whether partial or complete, under the termination program set up the government may not take advantage of technical defaults to cancel but must terminate (at the option of the government), according to Major Thomas J. Godfrey, officer in charge of the contract termination branch, Philadelphia termination branch, Philadelphia QM Depot, at a recent meeting in Chicago.

Contractors' responsibilities are to stop work on a contract on the date and to the extent specified in the notice of termination. Also, no further orders or subcontracts for materials or services except as are needed to complete portions of the order not terminated can be placed. If it is impossible to comply with these instructions, the contract termination branch should be notified immediately.

The government's attitude toward subcontracts is that these should be handled by the prime contractor as he is familiar with all the individual terms of his contract.

CLAIMS UNDER $10,000. Blanket authority is given to the prime contractor, or to the subcontractors, to settle all claims where the gross amount is less than $10,000 and where the contracting officer is convinced that the prime contractor will make fair and equitable settlements which protect the interests of the government.

PROPERTY DISPOSAL. The War Department has taken the stand, according to Major Godfrey, that the mill is in the best position to dispose of material it may have on hand, knowing best its uses. The mill will be given permission to retain all the inventory at cost without any further approval. If it offers a good price below cost, the government will still allow the mill to retain the inventory and will pay it the difference between the cost and the retention price.

The Notice of Termination, for example, will ask the mill to furnish a complete inventory of the materials which were left in the plant by reason of the termination. It will also ask the mill to furnish a proposal for settlement. In other words, the mill should advise the cost and the amount of money which is due by reason of the termination, explaining why. The government does not want a complete and accurate inventory right away.

PROFITS. The government will pay the mills, whether by negotiation or formulization, a profit on work done and on inventory actually obtained. It will not pay a profit on any work which has not been done.

The termination article specifically provides for partial payments to the terminated war contractors. The government recognizes that in some cases the settlements may be delayed. Therefore, it will not wait until the settlement is finally cleaned up before paying the mill, but will pay as quickly as the mill is able to establish the amounts due it. In addition to provision for these partial payments, the government has set up a system of interim financing to tide mills over the critical period.

ACCOUNTING PROCEDURE. Two major methods which may be used in the contractor's settlement proposal,

(*Continued on page 88*)

TERMINATION NOTICE

Form No. 1

Customer _____ Order No. _____
Custo. No. _____
Quantity on order _____
Quantity cancelled _____
Quantity to ship _____

Date _____

Subject: Termination

From: Manager, War Contracts

To: Sales
Production planning
Production
Purchasing
Accounting

The above war order has been:

☐ Terminated
☐ Curtailed
☐ Reinstated

Within 3 hr. each mill department must fill out accompanying Forms, Nos. 2, 3, and 4 and forward these forms to termination coordinator.

CONTRACTOR

WORK IN PLANT INVENTORY

Form No. 2

Customer _____ Date _____
Quantity _____ Order No. _____
Quantity cancelled _____ Schedule No. _____
Location of material _____ Area in plant _____
Counted by _____ Date _____ Approval _____

No.	Description	Stage of Production	Lb. Processed	Lb. on Hand

RAW STOCK ON HAND — Not in Process

Form No. 4

Date _____
Order No. _____

Raw stock item we have on hand for your Contract No. _____

Location _____

Lot No.	Quantity on Hand	Description	Purchased From	Unit Cost	Total Cost	Estimated Weight	Recommended Disposal	Amt. Offered

METHOD OF DETERMINING PROFIT

ON UNCOMPLETED PORTION OF CONTRACT

Form 5

Order No. _____

Contract No. _____

We have spent $_____ labor on _____ uncompleted units, or $_____ per unit.

The ☐ actual ☐ estimated labor for one complete unit is $_____.
Therefore the percentage of completion of uncompleted units is _____%.
* * * * *

This percentage is then applied to the profit that would have been realized on the _____ units, had we been permitted to complete them. This profit is computed as follows:

Unit selling price of one completed unit $_____

Cost of completed unit:

Manufacturing cost $_____
Overhead $_____
Total Cost of Sales on Unit $_____

Profit on Unit $_____

Rate of Profit: Profit ÷ Selling price = _____%
Selling price of _____ units uncompleted = $_____ $_____
Profits if completed _____% of $_____ or $_____

Since this incompleted portion is _____% complete as shown above, we are entitled to _____% of $_____ or $_____ profit on these _____ units.

TIME AND PROCESS REPORT

Form No. 3

Date _____

Customer _____ Order No. _____

To: Termination Coordinator

From: Production planning
Purchasing
Production, _____ Dept.

We have / have not completed work on the above order.

Total time used in our Dept. _____

Do Not Use This Space

Hours _____ X _____ Rate = _____ Total Cost

STATEMENT OF CHARGES

Form No. 6

Our Order No. _____ Customer _____
Contract No. _____ Description _____
Date of cancellation _____
Date of statement _____

Cost of Uncompleted Order:

Raw material (Form 4) _____
Material in process _____
Labor in process _____
Overhead _____
Other expenses _____
Unamortized pre-production expenses _____

Total cost of uncompleted order . . . . . .
Profit on uncompleted order (Form 5) _____
Total charges . . . . . .

Charges on Completed Units Undelivered:

_____ units
Costs subsequent to termination _____
Total termination charges _____

Estimated work in progress _____
Salvage:
Amount offered for work in progress _____
Amount offered for raw stock on hand _____
Total disposal value _____

Total cancellation charges if recommended material disposal is accepted

COORDINATOR

outlined by Warrant Officer Samuel J. Duboff, Philadelphia Quartermaster Depot, at the conference of National Knitted Outerwear Assn., are:

1. The Inventory Method. Costs applicable to work done on the uncompleted portion of the contract are summarized in the proposal. This method is desirable because of its relative simplicity in presentation and audit. (Form No. 6 may be used for this purpose.)

2. Total Cost Method. The contractor may wish to use this method where his system of keeping accounts is such that costs cannot be reasonably allocated to the uncompleted portion of the contract. Under this method costs applicable to all the work done on the contract to date of termination are summarized. Profit, if any, is added and any amounts billed or to be billed are deducted.

3. Other Methods. There are other methods, such as percentage of completion of contract, that may be used. Before using any other method, however, the contracting officer should be consulted for manner and form of presentation.

Information should be submitted and supported by detailed schedules on forms covering:

1. Contractor's own costs.

a. Raw materials, supplies, and purchased parts.

b. Work in process. The application of manufacturing expenses should be submitted in sufficient detail to allow for verification.

c. Tools, machines, fixtures, etc. Total cost and unamortized portion applicable to the terminated part of the contract should be indicated.

d. General and administrative expenses. The allocation should be submitted in sufficient detail to enable independent check.

e. Other costs, not included above.

2. Profits. The basis for and the computation of profit should be explained in detail.

3. Settlement with subcontractors and settlement expenses.

4. Deduction for partial or advanced payments, disposal, and other credits.

The revised settlement proposal provides for a new schedule, known as the "Accounting Information Schedule," which is set up in questionnaire form. The answers to this questionnaire provide the procurement agency with additional information which will facilitate the review of the proposal. Care must be taken that the proposal is arithmetically accurate and that all the supporting schedules and expenses agree with the totals contained on the settlement form.

The preparation and submission of the settlement proposal are extremely important. It is the desire of the War Department that detailed audits be held to the minimum. If the proposals which are submitted are complete and accurate and contain adequate explanations, the auditing procedure will be limited to an office review without reference to the books of the contractor. Some of the factors which may determine whether to go beyond the office review are:

1. Complexity and amount involved.

2. Confidence in the contractor.

3. Adequacy of supporting information.

4. Reliance on accounting reports submitted by the contractor, etc.

The contractor's system of accounts may not be set up to indicate costs applicable to either the uncompleted portion of the contract or to the entire contract up to date of termination. Now is the time to review the system from this aspect so that if and when termination time comes, these costs may be quickly determined.

ACCOUNTING METHODS. Some contractors may, for the first time, have to concern themselves with work in process, and questions undoubtedly will arise on the methods of allocating manufacturing expense to these inventories. The basis of allocation must be fair and reasonable. It should be based on either labor cost, labor hours, machine hours, units produced, or on some other reasonable method. If predetermined rates are used, they should be compared to actual results of operations over a long enough period to insure their general accuracy and reasonableness. Items not allocable to government work should not be included in manufacturing expense (depreciation on machines used only on other work, etc.)

General and administrative expenses should not include items (a) excluded by PR 15 (income taxes) or (b) not applicable to the contract (cost of credit office). The application of general and administrative expense to the terminated portion of the contract should be on a reasonable basis.

Where standard cost systems are in use, the standards should be compared with actual results to determine their reliability.

Certain problems may arise if a portion of the terminated contract was included in renegotiation proceedings. In that case, reference should be made to PR 15, paragraph 484, sub paragraph E.

Production records should be reviewed to determine that they are adequate and up to date.

INTERIM FINANCING. Prompt financial assistance is available to assist war contractors in connection with the termination of their contracts. Four methods of interim financing are:

1. For contractors still in war production, guaranteed "V" and "V-T" loans may be utilized to provide financing in the event of termination.

2. A new simplified type of guaranteed "T" loan is solely for use on terminations.

3. Liberal partial payments will be made while terminated contracts are in the process of settlement.

4. Advanced payments can be authorized prior to termination or increased advances can be authorized.

V, V-T, and T loans are handled through financing institutions. Advance and partial payments are handled by the procuring agency. Major policy with respect to the new "T" loan seems to have been set, and detailed instructions should be forthcoming very soon. Loans under this method will be granted by financing institutions on a formula based on a percentage of accounts receivable (probably 90%), inventories and work in process (probably 80%), and on settlements with subcontractors (probably 80%) arising out of termination of War Department contracts. The loan will be granted, in most cases, upon a certificate of the borrower with respect to the items included in the formula. It is contemplated that these loans will be speedily made.

Partial payments seem to be the preferred type of financing from many angles. It is speedy, interest is minimized, and it is made directly by the procurement agency. It is the general policy of the War Department that contractors will be given partial payments of amounts owed them. There are three types of partial payments:

1. Immediate partial payment based on a preliminary estimate before an adequate inventory or statement of cost can be prepared. This will be based on a certificate by the contractor, and will be limited to 90% of the amount stated in the contractor's certificate.

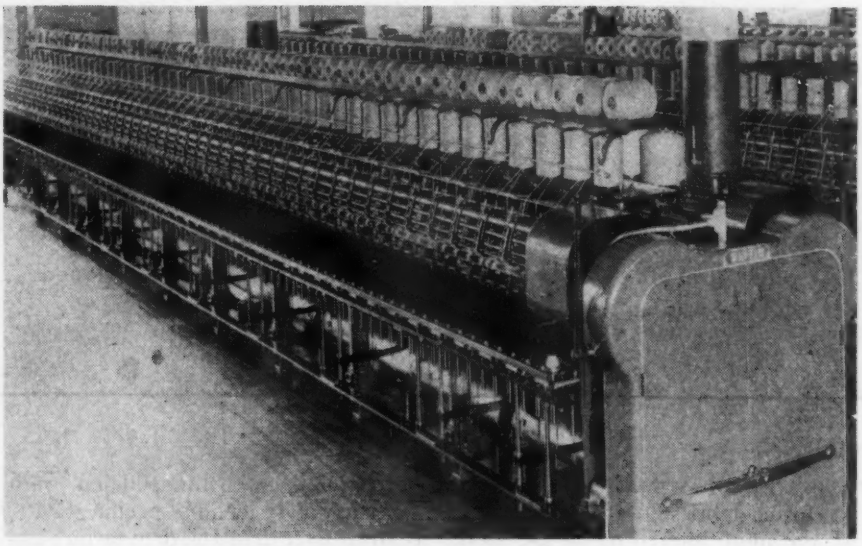
2. A cost-supported partial payment made after the contractor has submitted a settlement proposal. This is based on specific formula.

3. A controlled partial payment to be deposited in a special controlled account, to be released as particular items of cost become established and are presented for payment.

More Economical Spinning with BALANCED PACKAGES

HIGHLIGHTS: Large Savings Possible in Worsted Drawing and Spinning—Creel and Doff Simultaneously—Control of Yardage on Supply Package Necessary.

By MORRIS C. BISHOP



On this machine, one side can be be creeled at a time. The next machine is running irregular-length supply packages.

THE SPINNING of yarn and the weaving or knitting of fabrics are such old arts to both the home and the mill that it is very seldom a new idea comes along which saves more than a few percent; in fact most mill men are content to look for fractions of one percent. It should be of considerable interest, therefore, that balanced packages can cut labor costs in large percentages for many worsted drawing and spinning operations, and, at the same time, effect some reduction in waste and sometimes an improvement in quality.

The plan works thus: A creel is loaded with a full set of packages having uniform yarn or sliver lengths. The frame is run until the creel runs out. The creel is replenished and the cycle repeats.

Of course, there are numerous variations of this plan. For example, several doffs may be run before the creel is replenished. Assuming two or three doffs per creel, a half or a third of the creel may be replenishd each time the machine is stopped to doff. The important thing is to creel and doff simultaneously. This reduces the percentage of machine-down time, and of operator walk time. If possible, creeling should be arranged so that it takes no longer than doffing.

CONTROL NEEDED. A new system such as this assumes close control of the yardage on supply packages. This may mean installing counters on preceding machines. There are many types which may be used, but, if possible, "predetermining" counters should be used. These are counters which can be set for any length and after a machine has run the predetermined length, the counter stops the machine. At times it is desirable to have the machines stop at a particular position. This can be achieved in various ways. The simplest is to have the counter actuated by some part of the machine just prior to or during this phase. By so doing, the cut-off can be made to occur as desired.

It can be seen from the foregoing that installing a balanced-package system entails more than just orderly planning. In some instances new bobbins might be advisable—particularly if balanced-package operation can be coupled with larger packages. New bobbins may mean new handling-systems such as boxes and lift trucks, or perhaps an overhead system.

ADVANTAGES. It is entirely possible that none of the foregoing items of expense need be incurred and that only a little reorganizing is necessary to obtain these advantages of a balanced-package system over a system of irregular run-outs:

1. Very little, if any, residual yarn is left on the creel packages.
2. The frame will need only little attention between doffs, unless the wool is running badly.
3. Run-outs between lots are abrupt, saving idle machine time.
4. So little attention is frequently required on the part of the operator that more frames can be attended—sometimes twice as many.

In order not to disrupt creeling and doffing such as outlined, short-doff or irregular lengths of supply packages should be run on special machines (or specially designated spindles if the amount is small). When so doing, supply-packages that will not run until the next doff can be creeled out—especially when spinning filling yarn.

The foregoing is an outline of a very attractive potential which is easier to describe than to attain. The system requires that the running of the frame be substantially automatic between doffs. Thus the frame needs inconsequential attention on the part of the operator. In too many cases this is far from the truth, either due to condition of the fiber, machine adjustment, humidity control, or other factors affecting the amount of attention the machine needs from the worker. Thus, to make satisfactory use of balanced packages, conditions must be close to the best possible.

Assuming that all technical problems are solved with respect to the fiber, the machine, humidity, and use of knock-off motions to obtain balanced packages, there is still one hurdle which must be crossed and that is the attitude of the employees to a change in their method of operation and the number of machines tended. Careful explanation of factors involved and confidence in the management are invaluable here.

Spuns, New Yarns, Finishes Outstanding Factors In KNITTING SYNTHETICS

HIGHLIGHTS: Sizing on Yarn Important in Knitting of Women's Hosiery — Synthetics Spun on Silk System Have Low Twist, Yet Adequate Strength — Velon Hosiery Yarn Being Aggressively Developed — New Finishes May Expand Field of Knitted Synthetics.

By C. W. BENDIGO
*Assistant Editor, TEXTILE WORLD**

**Abstract of paper presented at the annual meeting of the American Association of Textile Chemists and Colorists at Atlantic City, Oct. 14.*

THE USE OF SYNTHETIC FIBERS in knitted fabrics covers a wide field, but the more interesting or the more significant factors can be classified under one of these three general headings: new yarns, finishes or sizes, and spun yarns for knitting. Of course, there is overlapping, as some of the new yarns are spun yarns; and the finish or sizes applied to the new yarns are extremely important.

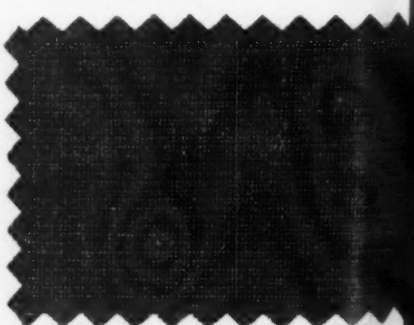
There has been considerable interest in Velon as a new hosiery yarn. This yarn in filament form is still in the development stage but is being developed aggressively. Some full-fashioned stockings have been knit experimentally from 100-den. Velon containing about eight or ten filaments. It has been found that this 100-den. yarn (which, due to its high specific gravity, is much finer than 100-den. rayon) can be knit on full-fashioned machines as fine as 51 gage. It is taken for granted that the yarn will be entirely suitable also for circular knitting, due to its thermoplastic properties.

Spun-rayon full-fashioned sport stockings.

The finishing of Velon hosiery will present various problems, particularly since there is at present no known method by which the material can be dyed, except to color the solutions before spinning. This does not mean that a fugitive tint cannot be put on the yarn for identification purposes, and such a tint is being employed in conjunction with a soaking so that the yarn will withstand twist-setting and knitting. In finishing Velon hosiery, it is claimed that no preboarding is necessary and the only real finishing required is removing the tint and treatment put on the yarn. This presumably is just a washing action, after which the stockings are boarded at approximately 235° F. This simplifies the finishing operation, while at the same time limits the control over the shades in which the hosiery can be furnished. The foregoing may appear to be overly simple; and undoubtedly when Velon is used commercially as a hosiery yarn, many problems now unforeseen will arise.

NYLON. Nylon is scarcely a new yarn, although it just barely started in the knitting field before it was withdrawn for 100% military use. When released, it is expected that this yarn will at first be used principally in women's hosiery. Leg yarns undoubtedly will be 30 or 40 den. and welt yarns possibly 70 den. It can be assumed that the nylon yarns which will be first offered for hosiery will be the same bright yarns which are now being manufactured for human escape-chute cloth. When yarn is produced specifically for hosiery, it undoubtedly will be the delustered type, although there is but very little visible difference between a stocking made from the so-called bright nylon and the delustered nylon—assuming that twisted yarn is used.

Just before nylon was taken off the market, 15-den. hosiery was considered the ultimate. There have been samples knitted experimentally finer than 15 den., and it can be reasonably assumed that there will be production of fine-denier monofilament nylon hosiery in the not too distant future. Both nylon and Velon are adapted particularly well to circular knitting, since their thermoplastic properties permit them to be shaped by heat rather than by regulation of the number of wales knit.



The usual shiny black tricot jersey.

SINGLE-END SIZING. Nylon yarn was sized in the single end when it was last used for knitting women's hosiery. Limited experimentation has been carried on in the direction of applying both the size and the oil in one operation; and it is claimed by some concerns that the necessary treatment can be applied to nylon in the coning operation, circumventing the conventional sizing and oiling. Whatever is the best treatment of the yarn is a matter the mills will soon decide when nylon becomes available to them again.

Nowhere is the importance of the finish or size on a knitted yarn any greater than in rayon yarn for women's hosiery. Viscose, acetate, and cuprammonium rayons have been used for many years in women's hosiery, but their use has been limited almost entirely to low-twisted yarns in the welt. When silk and then nylon were taken from women's-hosiery knitters, the market demanded that a twisted rather than a relatively untwisted yarn be used; and this brought the necessity for some yarn treatment which would plasticize, lubricate, and set the twist.

Differences exist as to what is the best method for treating rayon yarns to be knitted in women's hosiery. One company advocates a water-soluble wax which can be applied to viscose, cuprammonium, or acetate yarn. (Slightly higher amounts are recommended for acetate.) Another feels that solvent-soluble waxes are preferable, and it has developed one wax which is suitable for "wet" knitting and one for "dry" knitting. This latter wax is self-emulsifiable for ease in boiling off. The customary method of applying the waxes is by soaking skeins; however, some of the waxes can be applied by means of the emulsion rolls during coning (in instances when the yarn is received on cones).

One rayon-producing company is supplying treated 75/30 knitting yarn on cones. This yarn needs no further treatment for throwing and knitting. It should, however, be knit "dry" rather than "wet."

As was pointed out in September TEXTILE WORLD, an increasing field for synthetic yarns is warp knitting. One objection to warp-knit fabrics is a sheen that is quite noticeable in black. This sheen is quite difficult to overcome except by using twisted (thrown) yarn. At present, practically no synthetic yarns are thrown for warp knitting but undoubtedly much will be as market conditions return to normal.

Knit spun-nylon sweater has unusual texture.

SPUN YARNS. It is expected that spun synthetics in knitted fabrics will become of increasing importance starting with blends of synthetics and natural fibers on the customary cotton and worsted spinning systems and with 100% synthetic fibers on the spun-silk and possibly worsted systems. One of the problems in using spun synthetics in knitting has been the need for a soft-twisted yet strong yarn. This is difficult to achieve when the short staple necessary for spinning yarn on the conventional cotton system is used. But with the tow-to-top method of manufacturing staple and the spun-silk system for twisting it, the use of 100% spun synthetic yarn becomes practicable. Some 100% spun-rayon yarn is being used in full-fashioned sport stockings. Some 100% spun nylon is being used in very soft and fluffy sweaters. Such spun-nylon knit fabrics have an unusual hand. There also are blends of various synthetics being used, such as nylon and rayon.

On filament rayon, 12% is considered the minimum elongation from which satisfactory knitting can be obtained, whereas on spun-rayon blends, elongation rarely exceeds 12%. That means that spun-rayon yarns will knit when they have a lower elongation than continuous filament yarns. This can be understood because of the cushioning action and the fiber slip in staple yarn. Also the breakage of occasional fibers goes by unnoticed.

That spun rayons will become increasingly important in knitted fabrics can easily be understood when it is recalled that the staple can be tailor-made as to length, strength, diameter, and any other characteristics which appear desirable.

Dull black tricot jersey.

Strong Rayons Permit Use

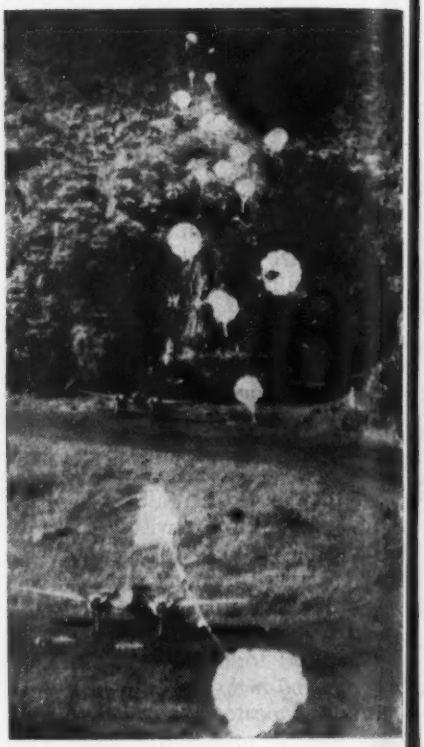
HIGHLIGHTS: Weaving Results Claimed Superior to Silk—Ragged Edges and Rough Cloth Often Overcome by Increasing Speed—Greater Warp Tension Prevents Slubs From Snarling Neighboring Ends—Lease Rod or Jumping Bar in Shed Is Helpful.

By H. E. WENRICH

STRONG RAYON YARNS

Manufacturer	Process	Deniers and Filaments					
E. I. du Pont	Viscose	.....	50/20	.....	.....	150/40	300/120
Amer. Viscose	Viscose	.....	.....	.....	.....	150/40	300/120
Amer. Enka Corp.	Viscose	.....	.....	.....	.....	.....	300/90
Celanese Corp.	Acetate	30/40	.....	.....	.....	.....	.....
Industrial Rayon	Viscose	.....	.....	75/30	100/40	150/40	300/80
New Bedford Rayon	Viscose	.....	.....	.....	.....	.....	300/120
North American	Viscose	.....	50/24	75/30	.....	150/42	300/75
Tubize Rayon Corp.	Viscose	.....	.....	75/20	.....	150/40	300/120

In addition to these, other strong rayons are being produced experimentally—some finer than the finest shown.*



Strong-rayon bomb chutes are shown here dropping on Jap twin-engine warplanes.

HIGH-TENACITY rayon yarns, the super-strong threads of the present war, have at long last allowed weaving manufacturers to catch up with high loom speeds. Up to the time of their introduction, loom speeds of over 172 p.p.m. had far outstripped yarn structures, resulting in loss of production efficiency on low-denier numbers. On some of the newer yarns, results show that higher loom speeds promote efficiency rather than diminish it.

On many weaves using semi-high- and/or high-tenacity yarns, slower-running looms often show loose and ragged edges; and occasional over-all appearances of rough cloth. By increasing the loom speed, these major defects often disappear, without making any further loom adjustments.

It is an interesting fact that on high-speed looms (over 172 p.p.m.) these two major defects will show up when the loom drives run dry and hot or loosen up, causing the loom to lose speed. The same condition exists on group drives with loom speeds up to 200 p.p.m. when, under certain circumstances, power factors cause a loss in speed. Whatever the reason in loss of speed on individual or group drive, as soon as correct adjustments are made, these cloth defects often stop.

It may be appropriate at this time to refer to the table of certain denier and filament numbers to understand better the subsequent discussions on weaving technics. You will note in the listing that practically every manufacturer named lists a 300-den. yarn. Also note that only one lists a 30-den. number.

These yarns are made for certain purposes, to be used in specified weaves for special needs. They are used at the present time for government materials and are listed as scarce yarns along with nylon and silk.

OTHER YARNS. For certain reasons, several other high-tenacity yarns cannot be listed. Some of these yarns are finer than 30 den., and are more or less in the experimental stage. In time, these yarns along with proven yarns will be available for civilian purposes. The writer is firmly convinced that at the appropriate time a new era in fabric structure will have arrived.

Weaving of high-tenacity rayon yarns has shown results nearly as favorable in running quality as nylon, and far more favorable than silk. There are practically no breaks on the 300-den. numbers. On low-denier yarns, with the exception of the 30 den. and under, weaving conditions compare to nylon and silk. Up to the present time, low-denier high-tenacity yarns contain a great many slubs. On the loom, these slubs feed along with the yarn through the harness, but hang behind the reed and form "fuzz balls."

For this type of yarn, it has been noticed that cotton corduroy makes a better race-plate covering than plush or felt. The yarn must ride slightly above the covering, and in this manner the "fuzz balls" will frequently weave through the reed.

When yarn has a tendency to fuzz too much, it is advisable to pull all fuzz balls through the reed at each cut-off. This practice will require a pull-up of warp yarn for only a few

* Recent changes: Tubize-75/30 replaces 75/20. Du Pont-150/60 replaces 150/40. Enka-300/120 replaces 300/90.

# of HIGHER LOOM SPEEDS

inches and will help the weaver, who usually over-emphasizes this fuzzy appearance. It is an uncommon occurrence for these collections of slubs to form floats, unless they are allowed to form into very large lumps.

Another interesting defect arising from these small slubs is warp-end breakage due to locking onto adjacent warp threads. It occasionally happens that, while the loom is running, the slub on one strand locks securely to two other strands and feeds into the warp drop-wires or the heddles. This action has surprising results; for instead of breaking all three strands, only one strand is usually broken. Even various sizing formulas have so far failed to correct this condition, and the most successful method of reducing loom stops due to this condition is to carry more warp tension than usual.

TENSION. On the regular run of rayon yarns, over-tensioned warps would soon show detrimental effects; but on high-tenacity rayons, the yarn weaves through without trouble, except for a slight narrowing of the goods due to excess warp tension. This same condition also occurs on nylon and is corrected or handled on the loom in the same manner.

The use of only one lease rod in back of the warp drop-wires will help considerably in running these yarns, regardless of denier size. The rod should be placed in the same shed opening as the last cross to prevent "bucking the cross" (a term used when the two sheets of warp yarn cross previous to approaching the lease rod). Another practice in some weave sheds is to use a small jumping bar which acts as a strand breaker behind the rod, but this idea is not so helpful as the rocking bar which remains in a fixed position warpwise. However, both arrangements do impart a slight rocking action that opens and closes the warp shed in front of the warp drop-wires. The rocking action can be actuated by the head, lay, or cam motion.

SUPERIOR RUNNING. On 75,- 100,- and 150-den. yarn, the warps normally run excellently. On these yarns, loom loads can often be increased in order to increase weavers' earnings, or to overcome an acute labor shortage. Very little warp-end breakage is encountered compared to regular rayons —looms have run for days without a single warp and breaking due to knots, slubs, or ordinary reasons currently found.

Even on the 300-den. numbers (now going into bomb-chute cloth), warp knots weave through without the trouble often encountered on rayons. The knot ends will fray up and have an ugly appearance, but will cause no trouble usually and come through heddles and reed without floating or breaking. On looms equipped with center feelers, a heavy knot along the sides near the edges may occasionally cause false loom stops. The filling yarn snares behind the knot and is held back for a fraction of time, allowing the filling strand to sweep behind the feeler-wires and stop the loom.

When mechanical reasons cause chafed yarn between the heddles and reed, these defective spots will usually run through without too much trouble after correct adjustments. If chafed spots appear in front of the heddles near the reed and not behind the heddles, the following check-up should remedy the source.

Check shuttle for rough spots. Polish shuttle.

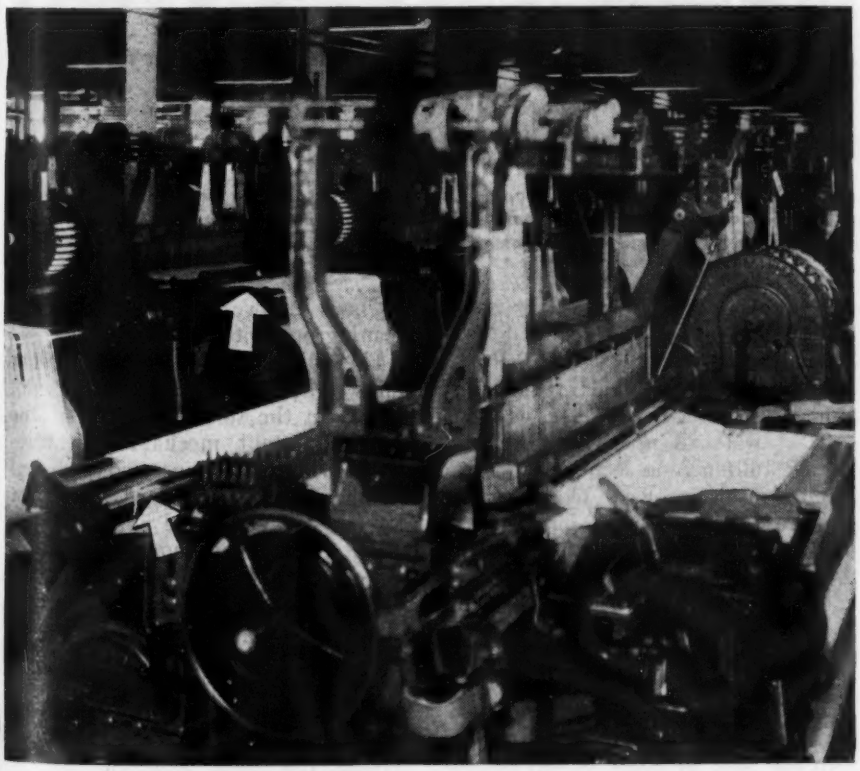
Check box reed and box alignment.

Check shed-timing and height to race plate.

Check pick-timing and parallel motion.

Even as filling yarns, high-tenacity rayons give little trouble. The 300-den. yarn or 7½-in. bobbins at 172 p.p.m. will run out quickly. Average time on bomb-chute cloth is 4 min. (A 50-den. yarn runs approximately ½ hr.) Loom loads for filling tenders are figured accordingly. On shuttle-changers, 20 looms represent a loom load for shuttle fillers running 300 den. As finer-denier numbers are mounted, the loom load can be increased.

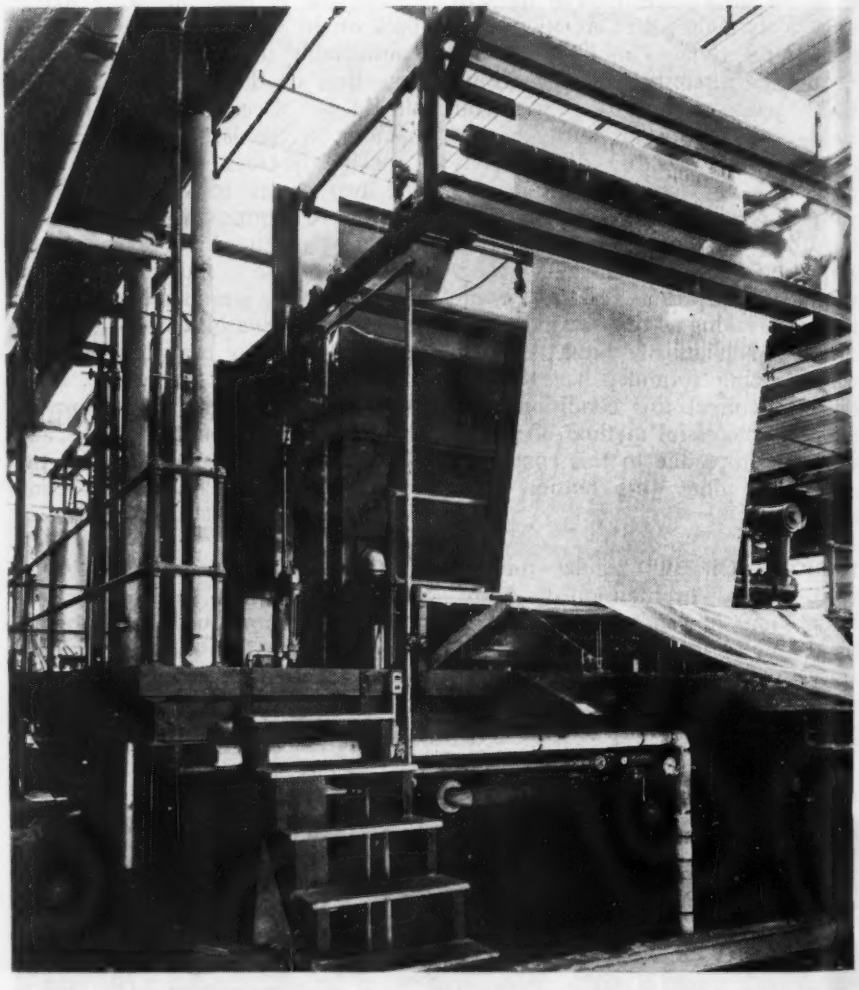
A great future is predicted for these super yarns. They can be combined successfully with other yarns; the low numbers of 30, 50, 75, and even 100 den. can be used for fine undergarments and linings, and heavier numbers can be used as filling for satins, twills, and novelties. Indications are that real silk is out as a luxury weave —nylons and high-tenacity rayons will replace it at less manufacturing cost on practically every type of high- or low-cost weave.



One lease rod between whiproll and drop-wires, as shown by arrows, is recommended when weaving high-tenacity rayon.

CONTINUOUS SOLVENT SCOURIN of Woolen and Worsted Goods

HIGHLIGHTS: Fabrics Not Damaged by Solvent Method — Fulling Possible Without the Use of Soap— Wool-Oil Recovered Permitted One Mill to Operate Seven Years Without Purchasing Oil.



The Derby Continuous Dry-Cleaning Machine for scouring woolen and worsted fabrics. Cloth is entering solvent tank where solvent dissolves grease, oil, paint, and similar foreign materials from fabric. *Photos courtesy of The Derby Co.*

THE PROGRESS AND THE SUCCESS made in the solvent method of scouring woolen and worsted piece goods has been an outstanding achievement in the wool-textile industry.

Since the invention in 1936 of the Derby continuous dry-cleaning machine and the subsequent manufacture and sale of seven of these machines by Riggs & Lombard, Inc., Lowell, Mass., the industry has watched with interest the results of their operation under wartime conditions. Reports from the mills that have put these machines into operation show that the efficiency and economy of this type of cleaning can no longer be questioned.

In the first place, the goods as they come from the loom are cleaned immediately; subsequent operations are greatly simplified. The burling and mending immediately become more efficient.

After burling and mending many styles go directly to the dyehouse if shrinkage or felting is not required. Two typical cloths that follow this routine are worsted or woolen crepes and cotton-backed boucles. These fabrics are always more or less damaged in obtaining their desired finish by the wet-finishing operation of scouring with soap and alkali. By solvent-scouring and then dyeing, a clear, unbroken thread results in a finish which has been almost unattainable by older methods. The time-saving in these and other similar cases is very apparent, and is naturally followed by a correspondingly lower operational cost.

FULLING WITHOUT SOAP. One of the most important and successful outgrowths of practical operation of these dry-cleaners has been the ability to full almost any fabric with water alone. Fabrics ranging from 11-oz. flannels to 32-oz. meltons have been successfully fulled with only cold water, and just as well and with exactly the same amount of felt as was previously accomplished with 6 to 12 oz. of soap and 3 to 6 oz. of alkali per gal. of fulling solution. The time required is practically the same, whether soap or water is used, although the average fulling time seems to increase about 5% after solvent scouring. In some cases it has been desirable to use soap solution instead of water, but in these cases the amount of soap is reduced at least 70%.

Mills operating a continuous dry-cleaner never use a soap of more than ¼ oz. per gal. and seldom more than 2 oz. per gal. In fact, one mill has a standard soap solution of 1-oz. of soap and ¼-oz. of alkali for any fulling operating requiring soap. Soap is required where heavy chalk stains have not been removed entirely by the dry-cleaning operation.

The ability to remove loose dirt or stains, which in themselves are not soluble in the solvent, is one of the most important mechanical features of the machine. This is accomplished entirely by the action of a vacuum slot. In the very rapid flow of heavy-weight solvent, all loose particles of dirt are carried with it mechanically, and even if the pieces have been walked all over and are extremely dirty, the dirt is all pulled out at the vacuum slot and the pieces emerge from the machine, grease-free and dirt-free.

Some few paint spots are not entirely removed, depending on their original base, and some chalks and

fugitive stains are not entirely removed, thus creating the need for a small amount of soap in the fulling operation, as mentioned above. However, the difficult specks, stains, and spots, such as asphalt, tar, oil, and grease are all dissolved in the solution and removed completely. Wherever necessary, suitable chalks and fugitive stains can be found which can be removed completely.

Where soap has been used in fulling, naturally some washing is necessary for its removal, but the time and hot-water requirements are cut tremendously. Where water-fulling has been carried out, washing is seldom necessary and the goods proceed to the dyehouse, or in the case of fancy stock or yarn-dyed material, to the dryer and dry-finishing operations.

The effect of dry-cleaning on colors has been especially noticeable, whether piece-dyed or stock-dyed. In all instances the colors appear brighter and clearer, and in several cases an actual increase in demand for certain fabrics has been created. One particular instance of this was occasioned by the curtailment of solvent for this use for a short period due to war demands. A cross-dye women's wear kasha fabric was being successfully processed by the solvent-scouring method and was in great demand. When, due to solvent shortage, this fabric had to be processed with soap and soda, a duller appearance resulted, and the demand for this fabric dropped at once and the mill decided to stop production until solvent again became available.

SOLVENT USED. One solvent generally used has been stabilized trichlorethylene, sold under the trade name of Dercosol. Because of immediate war demands for this or some of its related compounds, it has been under close allocation by the WPB. However, because of the recognized need for its use in these machines and the tremendous saving of other critical materials by their use, the WPB has allowed all requests by operators of continuous dry-cleaning equipment, except for a period of about two months when curtailment was absolutely necessary.

Another important application of this method of cleaning has been the ability of reprocessing finished, piece-dyed material which has been stained in dry-finishing operations. Ordinarily these pieces which are dyed with acid colors would have to be re-dyed if soap and alkali were used to clean them. By returning them to the dry cleaner, the oil and grease stains are removed without damage to the color in the least. A similar use has been found in indigo piece-dyed material to reduce crocking; even if stock-dyed, the crocking has been reduced materially in several instances.

In the production of Army OD blankets, the cloth from the loom is dry-cleaned and carbonized all in one continuous operation, after which it is fulled with water and dried ready for napping, shearing, and final inspection. Dry milling has been unnecessary and production has increased from 20 to 30% in the manufacture of this particular fabric. Besides increasing production, the fabric has been loftier and clearer than it was possible to make by any other method.

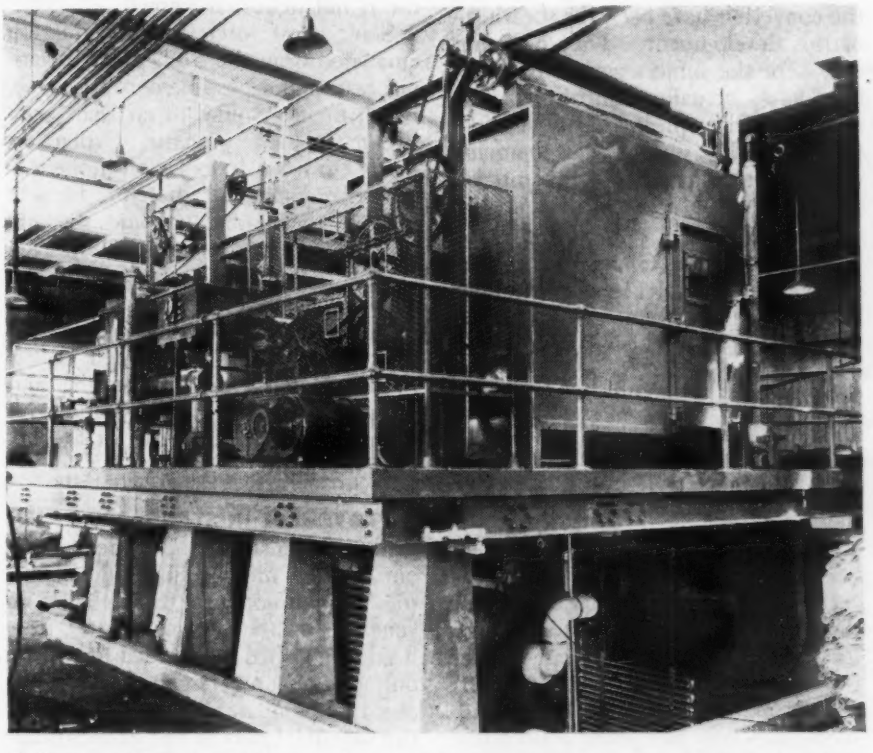
Obviously, carbonizing after solvent-scouring has been much more efficient than where carried out after fulling and scouring, and this has been proven to be a practical fact. The fabric is open, the burrs are loosely held, the cloth dries faster, and the carbonizing of the vegetable material is more complete and quicker than when the cloth is closely felted together.

RECOVERY OF SOLVENT AND OILS. Because of the recovery of the solvent, and also the lubricating oil used for carding and spinning, these products can be used over again as illustrated by the experiences of one mill which formerly purchased about four carloads of wool-oil annually has not bought any since the installation of their dry-cleaner in 1937. In fact, the mill has had an excess of oil, and has sold about one to two carloads a year. This excess is due to the fact that some of the raw material, in the form of reworked or reprocessed wool, is purchased from its source with a normal content of oil applied by the manufacturer of the raw material. Mills using the recovered oil find it satisfactory, and, in some instances, preferable.

FUTURE MACHINE CHANGES. Many changes have been made and will still be made as more of these machines are put into production. All changes as they are proven practical can be applied to original installations to improve their efficiency.

Changes are made to increase efficiency and economy of operation and to simplify the operation as far as possible. At the present time the cost of solvent for this operation is about 0.3¢ per lb. of material handled under careful operation. Future plans indicate that even this small cost can be cut in half.

During the war, stainless-steel was not available for the production of these machines. Recently some allocations have been granted by Riggs & Lombard, Inc., who are in the process of planning and producing the next machine which will have the latest improvements. The design of these new machines has been indicated by the experience gained in several years of constant use under varying and exacting conditions.



Delivery end of dry-cleaner shows cloth emerging from the drying chamber. Solvent and wool-oil are recovered by apparatus beneath cleaner.

WATER-REPELLENT Fabrics From Converter's Viewpoint

HIGHLIGHTS: Converters Lead in Standards Improvement — Objectionable Shrinkage to be Eliminated — Changes in Garment Construction May Help Repellency—Several Different Water Repellency Tests Needed for Correct Evaluation—Attitude of Purchasers Less Resigned During Last Few Months.

By A. CORNHALL,
Cornhall & Malamut, New York, N. Y.

IF WE ARE TO JUDGE by the amount of space in the trade papers devoted to water-repellent fabrics, and the amount of discussion and interest given these fabrics, we must come to the conclusion that water-repellent fabrics are among the most important items in the textile picture. One of the possible reasons for this situation may be the unusually cooperative spirit prevailing among the various parts of the textile industry concerned with the manufacture of these goods. I refer particularly to the chemical companies and their excellent technical staffs, the finishing plants, and the converters.

I believe it may be fairly said that the converters have been the spearhead of this development. They have not only kept the subject constantly alive, but have actually contributed the necessary drive, the necessary stimulation, for the various developments which have aroused all of this interest and discussion.

STUDIES MADE. Right now, the developments in water-repellent fabrics fall into three general categories; namely,

1. Minimum standards of water-repellency.
2. Shrinkage.
3. Special water-repellent linings.

The minimum-standard program has actually been in work almost a year. This project was undertaken by the converters, in conjunction with the chemical companies supplying the various water-repellent products. It will be particularly interesting to textile technicians that every conceivable effort was made to test fabrics and finishes of all descriptions, in order to have available the necessary information to arrive at a fair minimum-standard program. There already had been, of course, some attempts made to control minimum water-repellency by means of spray ratings. A quick examination of the available facts proved that the spray rating alone could not be used in any such program. Studies, therefore, had to be made of the other known tests, such as hydrostatic pressure and impact penetration—and also some of the new ideas which had been started, and which are being developed now, for so-called rain testing.

Illustrations of three of the more common forms of water-repellency testing apparatus are shown here. The test or tests that a fabric should be given depend largely upon its ultimate use. At times, however, its ultimate use is not definitely known.

Some most interesting information emanated from the study of these various tests and a possible correlation between them. Suffice to say that "confusion reigned supreme" when attempts were made to establish one correlated program. It therefore became obvious that individual and separate tests would have to be made on each fabric. After a careful study of the efficiency of the various tests, combined with the facility of making these tests, it was established that a combination of the spray-rating and hydrostatic-pressure tests would give the desired result, at least for the immediate future.

IMPROVEMENT IN STANDARDS. The final program still requires the ironing-out of a few merchandising details before it is announced to the trade in general. Basic requirements have been established and agreed upon, not only by the converters, but also by the chemical companies, the finishers, and the manufacturers of the garments.

I mention this only as another demonstration of the fact of cooperation. This minimum standard at this time must of necessity be a modest one. By bringing in the hydrostatic pressure test, converters recognized the importance of fabric construction. We, of course, know of the limitations of fabric construction, caused by the war conditions. With a return to normal, full operation, and the possibility of establishing whatever constructions may be found most desirable for the purpose, there may be modifications of this minimum-standard program, or possibly changes, to allow for variations in quality and therefore in standards.

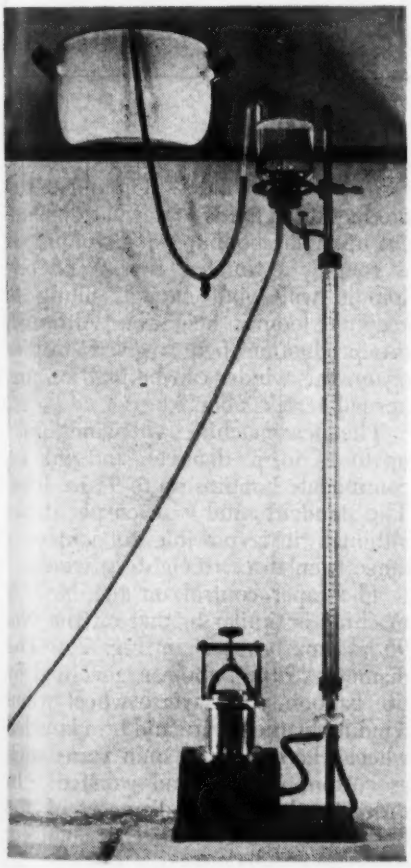
Rain tester for determining water repellency used in DuPont laboratory.

The present program is only the beginning, but it can be fairly said that all those participating in this program are looking forward to the improvement of the program and its ultimate development into wider fields.

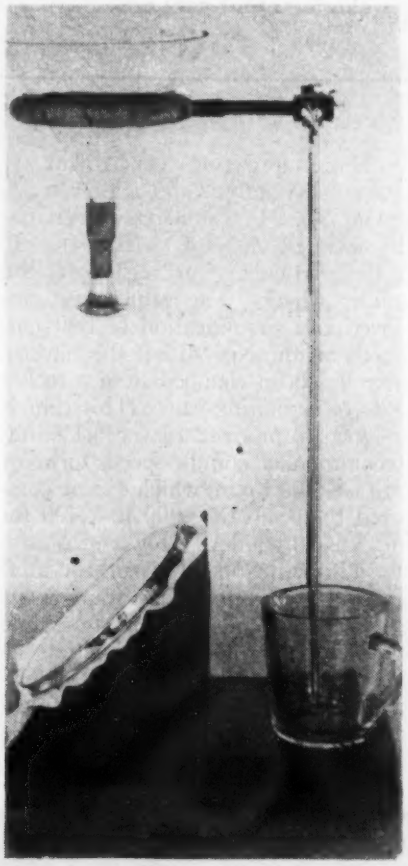
SHRINKAGE. This is a problem which has been much talked about, but as yet comparatively little has been done. One of the important reasons for this condition may be the fact that all water-repellent garments are not worn or handled in the same way. The younger element of our consuming public is inclined to prefer a certain carelessness, and, we might say, a certain dirty appearance, in garments of this type. This means that many of these garments may never be washed, or cleaned. Where that is the case, there is no problem of shrinkage.

Another point, in connection with shrinkage, may be the fact that this business grew substantially during the war period, when there was not only a lowering of standards in general, but also a lessening of consumer complaints, and possibly retailer complaints, as well. To put it plainly, manufacturers of these garments during the war period had practically no returns or complaints caused by shrinkage. There was no way of knowing how many people were actually dissatisfied with the garments, and therefore how serious this question of shrinkage really was.

During the last few months, however, there has been a change in this situation. Some manufacturers have reported a number of returns due to shrinkage. It is a fact that, in the converting of these water-repellent fabrics, a very small percentage are given a shrinkage process of some kind. We also know that the vast majority of the fabrics used do have a residual shrinkage varying from 6 to 10%. Obviously, garments made from these fabrics will certainly shrink when they are cleaned or washed.



A.A.T.C.C. tentative standard hydrostatic pressure tester in operation.



A.A.T.C.C. tentative standard hydrostatic pressure tester in operation.

Photos courtesy Fine Chemicals Division, Du Pont

Converters are very mindful of this problem and are open to suggestions and recommendations from the technical part of the industry.

SPECIAL WATER-REPELLENT LININGS. For this point of my story I must give credit to our friend, George A. Slowinske, of the Du Pont company, for the studies and recommendations he has made, in connection with the so-called dual thicknesses of treated cloth. This development is still very much in its infancy, but the statistical information already advanced has been so startling that the imagination of all the people in this field must be aroused. In one specific instance, tests showed that a single thickness of a water-repellent fabric failed in less than a minute when subjected to a synthetic rainstorm created by a machine devised by Mr. Slowinske. When this same test was applied to two thicknesses of this same water-repellent fabric, failure started in four minutes. However, when a single thickness of this same water-repellent fabric was combined with a single thickness of a light weight, resilient cotton-flannel, this combination resisted the synthetic rainstorm for more than 60 minutes. Results of some of these tests were made available to the trade several months ago.

War conditions make it difficult to develop constructive ideas, such as this one. However, converters were very much struck with the idea, and it has been a subject of constant discuscussion. There has always been something of a struggle between the field of water-repellency and the field of water-proofing. Unfortunately, these two terms are sometimes confused, but there is actually a very clear line of demarcation. Essentially, when we refer to water-repellent fabrics, we mean fabrics which have been treated with a chemical to resist rain, but still retain their porosity. In other words, these fabrics and the garments made from them are still open enough to breathe. On the other hand, waterproof fabrics are completely covered or coated and the resulting garments therefore have no porosity and do not breathe. We would like to have waterproof garments for certain conditions, but we would also like to have these garments porous, capable of breathing. The answer to this problem may be in the special, resilient-linings previously mentioned, when combined with the usual water-repellent outer fabrics.

PRESENT-DAY NEEDS. We must, of course, bear in mind that not all rainwear garments are required to be waterproof, a point sometimes overlooked. The average man going to business, or the average woman going either to business, or shopping, needs only a protective garment for the comparatively short period of time during which he or she may have to walk in the rain. A water-repellent garment for such a purpose is quite adequate. There are, however, other times when this garment may not be adequate, and this is the problem still unsolved which faces the converter. There is good possibility that the solution has been given to us, and it will be interesting to watch further developments.

AUTOMATIC WINDER Is Controlled Electrically

HIGHLIGHTS: Universal No. 99 Machine Uses Cam-Operated Solenoids of Special Design—Layer-Lock Wind Reduces Yarn Tension Needed—Some Parts Similar to Those on No. 90 Winder — Production Began Before the War—Both Filament and Spun Yarns Wound—Tension Is Released During Part of Cycle.

This article is the third of a series, which series is planned to cover all types of automatic filling winders produced in the United States. The first article appeared in the August, 1944, issue of TEXTILE WORLD; the second, in September. It is quite evident that automatic filling winding is destined to be an important factor in the production of woven cloth. The purpose of this series is to anticipate many of the questions that may arise.

THE USE of electric rather than mechanical control is a feature of the Universal No. 99 automatic high-speed bobbin winder which is described as a simplified No. 90 winder, plus an electrically-controlled automatic doffer. Construction of the machine began before the war, and one installation, which amounted to 960 spindles, is believed to be the largest installation of automatic filling winders in the United States and possibly the world. During the war, development work has proceeded and it is expected that postwar machines will be virtually foolproof as the result of operating experience.

In designing the machine, the manufacturers believed that fewer moving parts would be required if the various motions were controlled electrically rather than mechanically. To achieve this, a special solenoid was developed by the engineering department of Universal Winding Co.

The No. 99 is similar to the manually-operated No. 90 which it succeeds, particularly in regard to the builder wheel. The gainer case employed is a simplification of that employed on the No. 90 but the traverse drive has been changed from a rocker shaft to a rotating cam. This cam is designed to produce a layer-lock wind. Recommended spindle speeds for most yarn is 4,800 r.p.m. which can be compared to speeds of 2,000 to 2,400 for the No. 90 winder. However, due to the automatic operation of the new machine, it is felt that four of its spindles will produce as much as nine spindles did formerly. Production figures have shown that on 150-den. rayon, the high-speed automatic machine will produce 22 lb. per spindle per 40 hr. compared to 9 lb. per spindle for the No. 90 winder. Of course, the production figure is somewhat dependent upon the bobbin being wound. It is roughly estimated that ¾ of one spindle will wind enough filling to keep one loom in operation. Although the production figures given are for rayon, this winder can be used on any normal textile fiber.

The new machine will wind quills up to 1½ in. in diameter and will accommodate bobbins up to 9½ in. long. The standard wind is seven per stroke although it is possible to achieve a range from three to eighteen winds.

The taper control on the No. 99 machine is similar to that on the No. 90 as can be seen in Fig. 2. The diameter of the bobbin is governed by the balloon-type traverse wheel when winding filament yarn and by a knurled wheel when winding spun yarns such as cotton, woolen, and worsted. In order to change the diameter of the bobbin, the traverse wheel is changed.

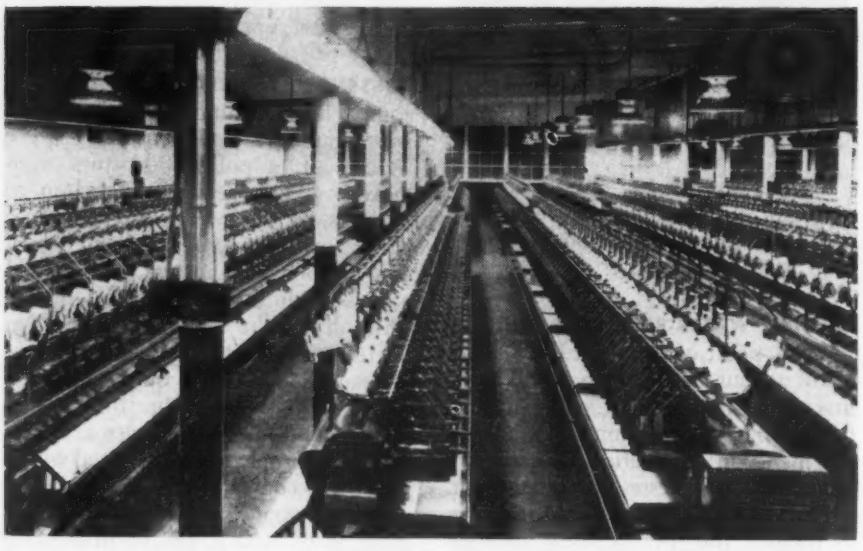


Fig. 1. Prewar installation of No. 99 winders in prominent rayon-weaving mill.

OVEREND SUPPLY. Any type of supply packages can be used which can be drawn over end. As can be seen in Fig. 1, there is a rack on the back of the machine for accommodating a stock of supply packages which can be creeled in from the back in such a manner that the operator performing this task does not conflict with the operator filling the magazines and the operator taking away the wound bobbins.

A feature of the machine is the connection of the tension device (gate or disk) with a solenoid. During the changing of the bobbin and building of the bunch, applied tension on the yarn is automatically released. The length of the bunch for each unit is

controlled by means of a knurled knob on a wheel which can be seen in Fig. 3 at the right-hand end of the shaft holding the timer cams.

The number of empty filling bobbins which can be placed in the magazine depends upon the type used. For bobbins with a No. 5 butt, ten are usually placed in the magazine which has provision for an adapter to handle butts of other sizes. The bobbins are driven by means of a centralizing driver which is designed to make bobbins run true. The spindle drive is geared to eliminate slipping.

In operation, it is the practice on large installations to use one girl to creel supply packages, a different girl to keep the magazines filled, and a third operator to piece-up broken ends and to collect the filled bobbins; although in smaller installations all three operations can be performed by one employee.

Fig. 3 shows the various cams which operate the solenoids and under it appears a table showing just how the various solenoids operate. By reference to Fig. 2 the action of the electric control can be followed.

AUTOMATIC DOFFING. As a full bobbin starts the automatic mechanism, the driving head *B* is withdrawn to release the full bobbin. After the bobbin drops, the thread guide *C* returns to the starting position and is followed by the retriever *A* which places the yarn in position to be gripped between the driving head *B* and the bobbin head. Fingers *D* place an empty bobbin into the winding position. As the spindle and traversing mechanism starts, the retriever *A* acts as a bunch-builder guide. Upon completion of the bunch, the retriever is released and goes to the front of the machine so that normal winding can be resumed. The base of the quill is determined by the cop-former *E*. The breakage lever porcelain eye *F* is part of the stop motion which stops the spindle should the running thread break. In order to restart the machine, all that is necessary is to press an electrical starting button.

When changing from one denier to another, the only correction in the machine-setting that is normally necessary is that for tension. Due to the layer-lock wind, tension on the No. 99 machine can usually be maintained lighter than on a No. 90 machine.

The machine is built in sections of eight units each. Six sections, 48 spindles, is considered a standard-length machine, although machines have been built as long as 56 spindles. A 5-hp. motor has been found adequate to drive 56 spindles at a spindle speed of 4,800 r.p.m. Experience to date has shown that one operator doing all operations can easily attend 72 spindles when running 150-den. yarn from 3-lb. cones.

To date weavers have expressed a decided preference for filling bobbins which have been built on the high-speed automatic machine principally because the automatic feature practically eliminates the production of filling bobbins without bunches and because of the layer-lock wind which reduces shelling off.

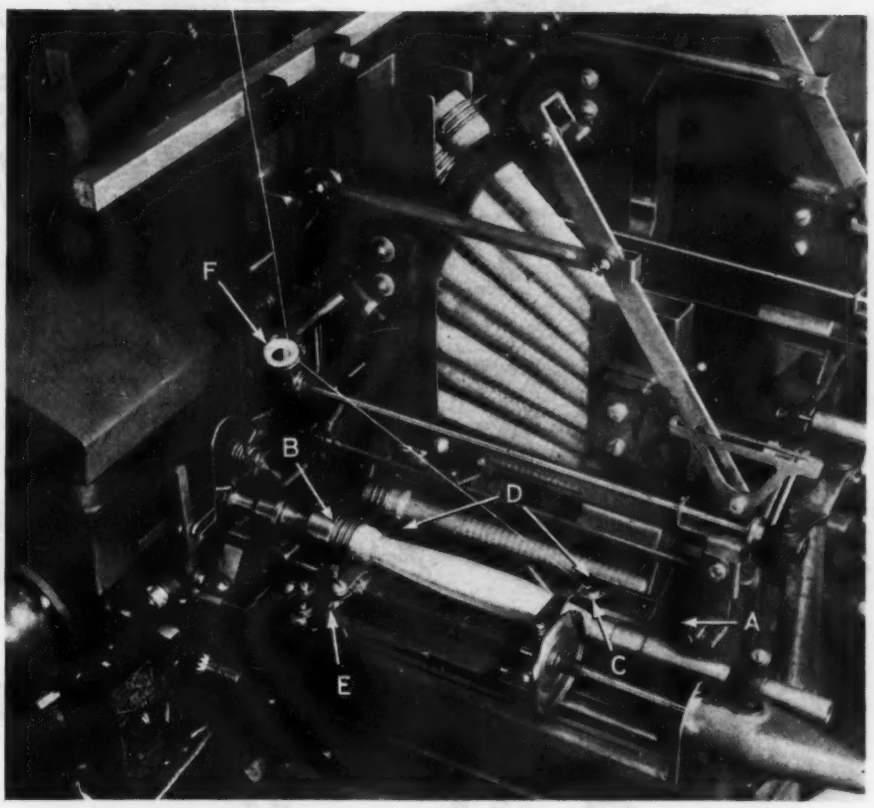
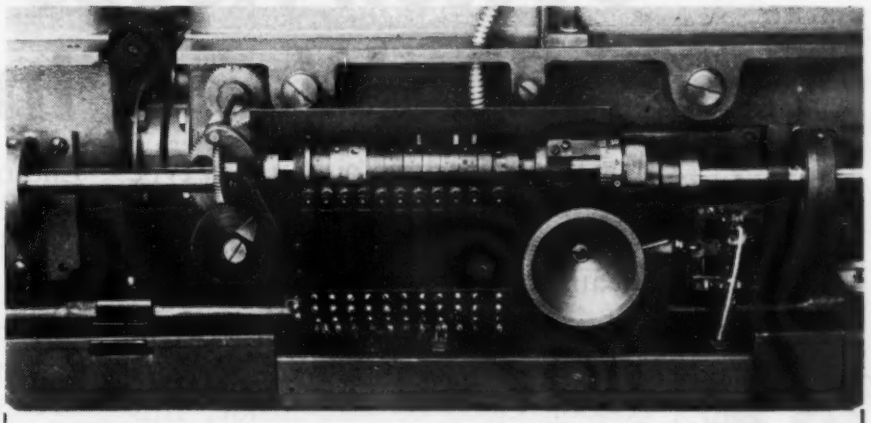


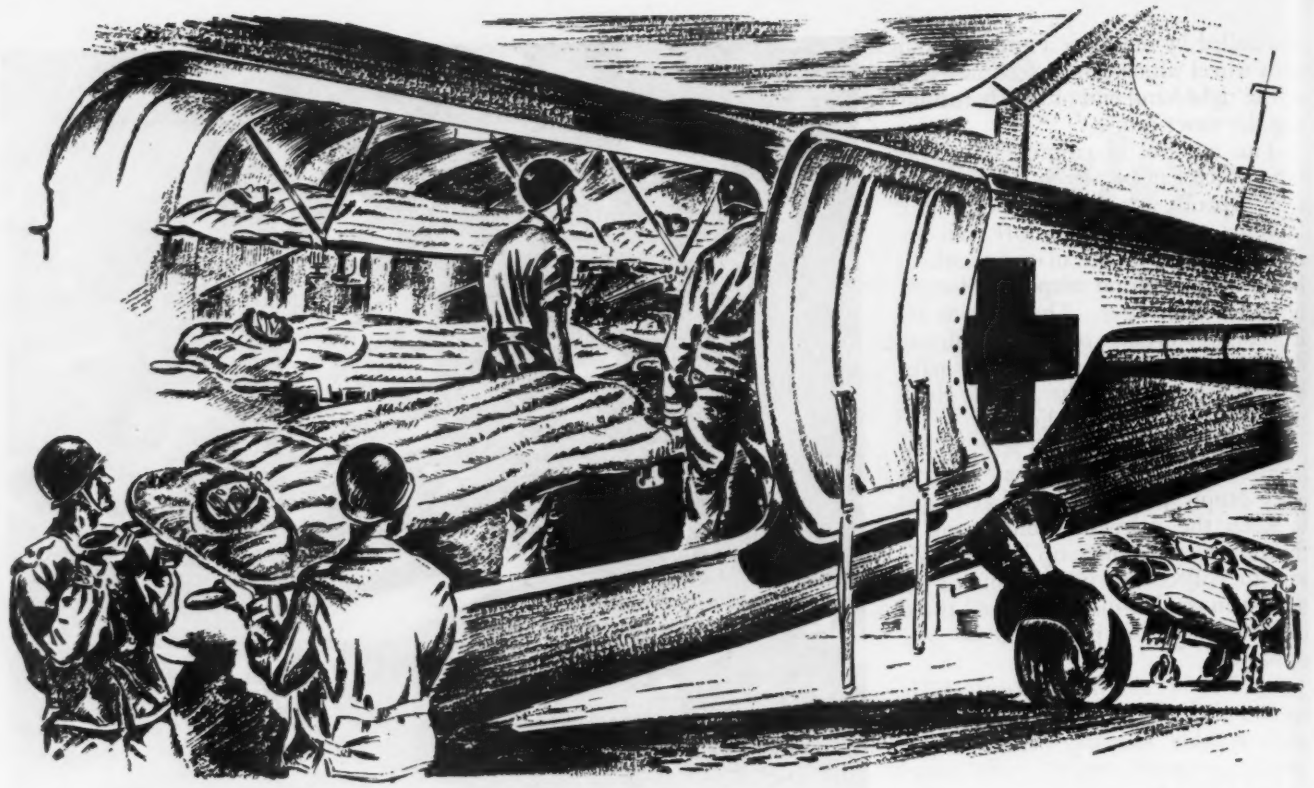
Fig. 2. Bobbin shown is about ready to actuate automatic mechanism.



Timer Cam Number	*Solenoid*	*Order of Solenoid Operations*	
1	*Timer Shaft*	*1*	*Timer Shaft*
2	*Yarn Retriever*	*3*	*Spindle Stop*
3	*Spindle Stop*	*10*	*Tension Opener*
4	*Spindle Sleeve*	*5*	*Traverse Return*
5	*Traverse Return*	*4*	*Spindle Sleeve*
6	*Magazine Release*	**8*	*Bobbin Drop*
7	*Spindle Start*	*2*	*Yarn Retriever*
8	*Bobbin Drop*	*6*	*Magazine Release*
9	*Magazine Return*	*9*	*Magazine Return*
10	*Tension Opener*	*7*	*Spindle Start*
11	*Bunch Builder*	**11*	*Bunch Builder*

**Cams 8 and 11 operate together. Cam No. 8 takes care of the operation of cutting the tail of yarn, and No. 11 operates the bunch, but they work together.*

Fig. 3. The timer shown controls the automatic operation of the No. 99 winder through a series of cams that actuate solenoids.



Cotton Keeps Wounded Warm in Air

The QMC has developed a new type sleeping bag to keep wounded soldiers warm during evacuation by air at high altitudes.

Made of water-repellent cotton duck on the outside and cotton balloon cloth on the inside, this new sleeping-bag weighs 24 lbs. Two feather-quilted mattresses are held together by slide fasteners. Ten separate zippers permit access to any part of the patient.

Heavy webbing strips sewn crosswise on the bottom mattress form three handles on each side.

Mills making fabrics for our Armed Forces depend on Butterworth Machines at every step in the Wet End of Textile Finishing ... bleaching, boiling-out, drying, calendering, dyeing.

The cooperation of Butterworth Engineers is freely offered to mills seeking to achieve increased production, or to repair or replace wornout or obsolete equipment.

All of our facilities not required for Ordnance production are available to help you solve your finishing problems, and aid you in your post-war plans. Write for our folder "Announcing a Policy on Orders Taken Now for Post-War Delivery."

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

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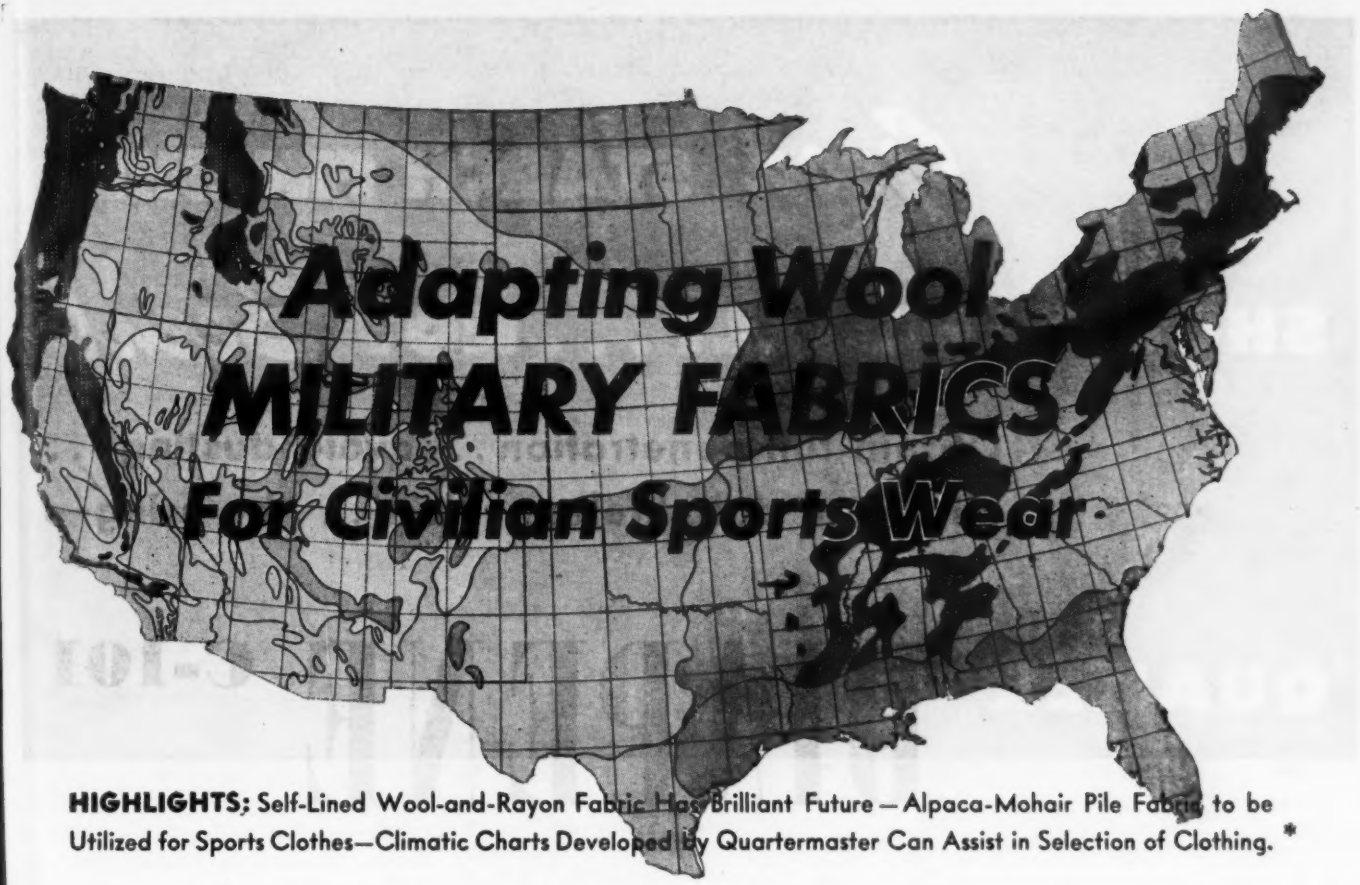
PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY



Adapting Wool MILITARY FABRICS For Civilian Sports Wear

HIGHLIGHTS; Self-Lined Wool-and-Rayon Fabric Has Brilliant Future—Alpaca-Mohair Pile Fabric to be Utilized for Sports Clothes—Climatic Charts Developed by Quartermaster Can Assist in Selection of Clothing. *

THIS WAR is fought in overalls, is a statement frequently heard at the Philadelphia Quartermaster Depot, the world's largest purchaser of textiles.

It is true that less woolens and worsteds are being used to clothe the American soldier than were formerly used, and that there has been a gradual trend toward the use of standardized cotton fabrics. But many of these cotton fabrics are used in connection with newly designed woolen and worsted fabrics to form garments and uniforms to meet the exacting conditions of mechanical warfare.

Under the demand for new fabrics and under the rigors of warfare, these new Army, Navy, and Marine fabrics are being tested on the toughest proving ground in the world. Practically any fabric that can pass these tests will find a use in civilian life, either in its original military construction, or in modified form to meet existing civilian conditions.

WHEN TERMINATION COMES. Two items that a mill working on war orders must consider when termination comes are: (1) what to do with the stock in process, and (2) what to do with undelivered goods on hand.

Contract-termination procedure has been outlined in the article "Termination of Textile-Mill War Contracts" appearing on pages 86 to 88 of this issue. When termination notice is received, a mill should stop all work according to details given in the notice. In the past, the QM has permitted all stock in process to be run out, but this may be changed. The mill then has 60 days to decide whether to purchase the material or turn it over to the government.

From the mill inventory of military goods in process and on hand, methods of disposal of goods should be apparent. Items to be considered at this point are: Is the raw stock in dyed form? Is the fabric still in the gray?

If still undyed, it is possible to direct most woolen or worsted fabrics into civilian channels without much difficulty. If dyed, stripping may be resorted to or the cloth redyed a darker color. Either of these methods involve additional processing expenses.

Stock in process previous to spinning and also stock already spun may be diverted into civilian fabrics of modified fabric construction.

NEW MILITARY FABRICS. Specialized fabrics utilizing yarns made from wool, mohair, alpaca, and other fibers have been developed by the armed forces to meet the needs for cold-climate clothing. These same fabrics will play an important part in the manufacture of sports clothing after this war.

In the opinion of many mill-men, soldiers returning from the war will be active in outdoor life because of the strenuous life they have lived in the Army. Sports clothing will, naturally, be a favorite with them.

Outstanding in fabrics development is Sunbak, a patented fabric, developed by William Skinner & Sons after several years of research. The fabric combines a napped wool-and-rayon back with a rayon satin face. Numerous construction changes are possible.

This fabric is, in reality, self-lined. Extensive use has been made of it in flying clothes to keep American flyers warm at 30,000-ft. altitudes. Four, five, and even greater numbers of linings made from Sunbak can be used to zip in and out of the flying suits, as required by climatic conditions.

Fabric construction is unusual in that wool back and the rayon face are woven to produce a single, integral fabric. This is accomplished by using one set of warp yarns and two sets of filling yarns. One set of filling is of continuous filament yarns whereas the other set is of spun yarns. The warp is usually of filament rayon. The fabric is so woven as to throw the spun yarns of wool on one side of the cloth and the continuous filament rayon on the other side. Thus, a satin face may be had, when using a satin weave, and a

* A typical climatic chart used by QM for determining clothing requirements in sections of the U. S. is shown above.

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- **Binds starch and talc, producing a scratch-proof finish that does not "dust out."**
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On pile fabrics DIAPENE C-101 is often used as a pure finish. Its binding action helps to lock the pile fibres in a manner that produces an erect, full pile with a dense and uniform face. Fullness and pliant firmness are imparted to the backing.

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back-fabric produced which can be napped. As the woolen or worsted yarns used for the filling always slide to the top and protect the rayon filling yarns, any napping of the spun filling yarns will not reduce materially the strength of the fabric.

Actual tests made by the United States Testing Co. comparing a 26.12-oz. cheviot, lined with regular satin lining, with a 19.05-oz. cheviot of similar type, which was lined with Sunbak, indicate that the Sunbak lined fabric is much warmer. In fact, tests showed that the Sunbak lined cheviot was 20.8% warmer and offered a weight saving of 11% in lined areas.

Another fabric having numerous applications in sports wear is an alpaca-mohair pile fabric. This fabric, with the pile yarn composed of a 50-50 blend of alpaca and mohair and spun into either a single or a 2-ply yarn, was developed for the Army Air Forces and for use by arctic troops.

Soldiers exposed to extreme cold must have clothing which provides insulation against the cold but which is porous enough to allow body perspiration to pass off. If perspiration is prevented from passing from the body, that portion of the body is subject to freezing.

The ½-in. depth alpaca-mohair pile tufts are bound in a "W" pile construction to an open backing. In the W-type of construction each pile tuft is held to the backing by being passed over one end of filling and then under two ends of filling. The backing is woven loosely so as to permit the passage of moisture through the fabric.

Arctic troops use garments cut from the pile fabric and made into jackets and trousers. The back of the fabric serves as backing, eliminating an additional sewing operation. A wind-resistant, water-repellent cotton jumper fits over the pile garment. This same type of garment may be worn in civilian life for skiing under conditions of extreme cold in the mountains.

Other civilian applications for this pile fabric are for zip-in linings for jackets and coats for sports wear and even for street wear in extremely cold climates. Such applications have already been made of this pile fabric.

Cushion-sole socks, described in TEXTILE WORLD, April, 1943, developed by the Quartermaster to protect the feet of soldiers in Africa from the burning sands of the desert, will find application in civilian life. Golfers, tennis players, and hikers will use these socks to prevent blisters and to absorb perspiration. Only slight changes are necessary to adapt these socks for civilian uses.

CLIMATIC CHARTS FORECAST CLOTHING NEEDS. After a year's research the Office of the Quartermaster General has developed maps, charts, and formulas which, for the first time, will predetermine the design and thickness of clothing necessary to protect adequately soldiers destined for service in any geographical area or location. These charts, after the war, have potential civilian use as a guide for skiers, skaters, and winter-sports enthusiasts in the selection of suitable clothing. Sporting-goods stores and even travel bureaus may utilize the charts so customers may better select the clothing required for the atmospheric conditions existing in that portion of the country they intend to visit. Fabrics will be constructed to meet these specifications.

A typical climatic chart, as developed by the QM Corps, is illustrated on page 101. This map covers the climatic conditions existing in the United States. Tables have been developed to assist in interpretation.

Along with these maps are charts from which can be determined the thickness of clothing necessary to keep the body adequately protected at the known temperatures and under varying degrees of activity.

In order to arrive at a standard of values from which calculations can be made, the Quartermaster Corps adopted what is known as the "clo-unit," which is a measurement of the thickness of clothing required at certain temperature while expending a given number of kilogram-calories per square meter per hour. One "clo-unit" is effective insulation of ¼ in. of clothing.

The expenditure of kilogram-calories per square meter per hour ranges from 40 while sleeping to 600 while in violent exercise. One hundred is the value for slow walking, and men marching at 3 m.p.h. would expend 150.

From the accumulated findings, maps for each month of the year are being developed with the climatic territories segregated and marked in "clo" values so that it is possible to see at a glance the "clo" requirement for any section and at any time of the year.

FINISHES FOR WOOLENS AND WORSTEDS. Wartime developments in finishing of military fabrics woven from wool will be of outstanding assistance to the lady-of-the-house after V-day.

Blankets will be rendered shrink-resistant during manufacture so shrinkage will be less than 5% warpwise and 3% fillingwise. This development may be traced to the Army.

It was necessary to develop a blanket for lining sleeping bags that could be washed a number of times and still be zipped or buttoned back into place. Ordinary blankets would shrink after washings and consequently would not fit the bag. By treating the blanket with melimene formaldehyde, it was found that shrinkage could be controlled.

Melimene and other resins will be used to control shrinkage of sweaters and other fabrics knitted of wool. A chemical company recently announced such a line of chemicals for postwar application. These will be applied to controlling shrinkage of blankets, sweaters, underwear, socks, etc.

Recent Quartermaster developments in treating part-wool socks to make them shrink-resistant through a mild chlorination of wool, will also find application after the war in controlling shrinkage in socks and in underwear.

Mothproofing of wool fabrics has not been an Army achievement. However, extensive civilian research is being conducted on this subject at present. It appears evident that in the postwar period a permanent mothproofing treatment may be available which will render wool fabrics mothproofed for their normal life.

Pile fabric with pile-tuft yarns of blended alpaca and mohair fiber have high insulating value, as required for winter sports clothing.

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It may seem a contradiction to try to stop an attack before it starts—but that is precisely what the Dowicides do in combating the costly ravages of mold, decay and termites.

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Dowicide has three basic uses in the textile field. In manufacturing operations, sizing materials are extremely vulnerable to mold attack. As they are often held in solution for extended periods, Dowicides are used extensively to prevent spoilage.

Dowicide can also be readily incorporated into the fabric itself to prevent mold growth. Tarpaulins, awnings, sails, etc., as well as many war products, such as Army duck and canvas for tents, are effectively protected with these materials.

In addition, Dowicide provides complete rot resistance for canvas goods which come in contact with the soil. Details of Dowicides' uses in the textile field are available on request.

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CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

NOISE REDUCTION In Mills Meets Worker Approval

HIGHLIGHTS: Suggested Textile Mill of the Future Has Inclined Walls—Mill Reduces Noise Level 68% in One Section of Weave Room.

By JOHN M. JOHNSTON
McGraw-Hill Cleveland News Bureau

CONSIDERATE TREATMENT of workers' auditory nerves having been found to pay dividends as rich as those obtained by thoughtful concern for their eyes, plant designers are giving noise-elimination an attention hitherto reserved for lighting, heating and hygiene. The researches of builders and acoustical engineers have a particular interest for textile manufacturers, because spinning and weaving operations are ear-assaulting to the degree now shown to contribute heavily to worker fatigue and lowered production.

The most recent principle advanced to combat this saboteur of efficiency is the construction of factory walls at an angle sufficient to deflect sound waves into absorbent ceiling, reducing reverberation to a minimum. Particularly noisy operations, in the plant so designed, would be confined in sound-dampening enclosures, with the machines mounted on and equipped wherever feasible with vibration-isolating materials.

Such considerations add weight to the contention that a substantial percentage of prewar, and many of the war-built, plants are obsolete by the best present-day standards.

INCLINED WALLS. A prominent firm of industrial engineers and builders, The H. K. Ferguson Co., Cleveland, Ohio, in forecasting factory design of the future, suggests that walls and windows be inclined outward from the foundation at an angle of between 5 and 10°, as shown in Fig. 1. Building height or materials may cause some variation, but in general the angle will be sufficient to deflect sound waves from the horizontal incidence, to be trapped in the acoustical ceiling.

An incidental by-product promised from this pitched wall is a reduction in weathering, with resultant savings in maintenance costs. Also, inclined windows prevent much of the overhead rays of the sun from entering the mill during midsummer, making working conditions more bearable.

The fatiguing effects of excessive noise have been conclusively demonstrated. Experiments in a university psychological laboratory showed that a 50% reduction in noise resulted in a 4% increase in stenographic speed, with a 19% decrease in energy consumption.

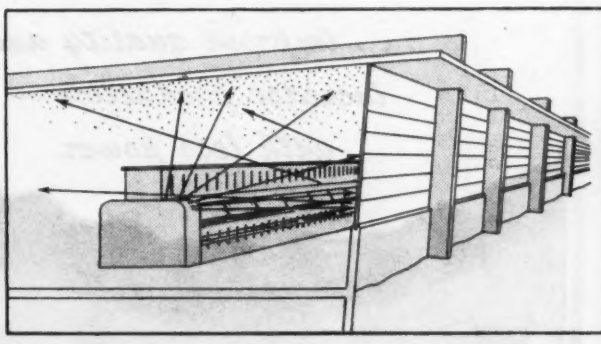

Fig. 1. Suggested mill construction involves walls that incline 5 to 10° to direct sound to acoustical ceiling, as a means of controlling noise.

Another test of the effects of a worker's continual subconscious effort to adjust to distracting noise was conducted by an insurance company. Acoustical treatment of working quarters brought a reduction of 52% in calculating machine errors, an increase of 8.8% in efficiency. These results were checked by secretly restoring previous sound conditions, which produced equivalent rise in errors and loss in efficiency.

Such mathematical determinations as these have been confined to clerical operations where laboratory technique could be applied. But noise-reducing treatment of noisy industrial operations have brought results which supervisors term highly satisfactory, in addition to the intangible dividends in employee appreciation, health and safety.

MEASURING SOUND INTENSITY. Measured in decibels, the unit of sound intensity, the sound-lever meter records an airplane motor at 120, at a distance of 20 ft., a street car at 75. Taken into typical textile mills, the meter, three feet away, registers 95 to 100 for a loom, 93 to 96 for a sewing machine. These compare with an average of 80 decibels three feet from a lathe.

Any intensity above 50 decibels has been shown to be distracting, and levels above 90 hold the possibility of definite harm to the ear. An average quiet office will record around 40 decibels, a noisy one as high as 75, with reduction in efficiency relatively the greater because of the higher degree of concentration required.

The decibel being a comparative rather than an absolute unit, noise-level measurements alone will not suffice to indicate the degree by which sound in a particular spot may exceed a loudness acceptable for comfort and efficiency.

The nature of the work must be considered, as well as the temperament of the worker. Women workers, entering industrial plants from the comparative quiet of housework, would certainly be expected to be more readily distracted by noise than one conditioned by long familiarity.

Likewise, acoustical studies have determined that noise recurring at either regular or irregular intervals is more annoying than a sustained sound of higher intensity. Such intermittent noise is to be found in weave rooms.

The noise of a machine or group of machines is the compound of many different individual sounds. In the hands of an expert, the noise-frequency analyzer, used in conjunction with the sound-level meter, can sort the component parts of a complex vibration, and thus indicate which most need to be reduced.

A factor multiplying these disturb-

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ances to the nervous system is the reverberation of these sounds, which the customary hard or glazed factory wall reflects to the extent of nearly 100%. The effect is illustrated by the roar of subway cars as compared with that of the same train in the open air.

It is here that the principles of design to overcome noise make their initial appearance. The first applications of pitched walls were in radio studios. In such small enclosures, where even the ceiling could be angled or constructed in several planes, echo was comparatively easy to eliminate. In a factory building, where the ratio of floor space to wall area is infinitely greater, pitching the walls obviously would be only the beginning of the noise-reduction treatment.

Undue importance attached to that single factor might result in the erroneous conclusion that substantial success could not be achieved in existing plants—for off-perpendicular factory walls still exist only in the eyes of the crystal-gazers, however wise in their foresight.

Porous or soft surfaces will absorb from 50 to 100% of the sound directed against them. A wide variety of materials has been developed to achieve this treatment of walls, which are applicable to walls of existing plants in an effort to absorb noise.

ABSORPTION OF SOUND. A number of companies have entered the vibration-insulation field, and successfully mounted even huge presses so as to isolate their shock against transmission to the air and floors. Rubber, cork and steel springs are so employed. The use of felt pads under looms, which machinery creates a severe problem in noise and vibration reduction, has long been an accepted practice. Cemented to the floor, these have the advantage of requiring no anchorage for the machines set upon them. Whether they do the best possible job of vibration isolation might well be the subject of study.

Enclosure of especially noisy operations is a method less adapted to textile mills than, say, to a machine shop, although workers when questioned have admitted that they were annoyed by so seemingly-inconsequential an extraneous sound as the whine of a ventilating fan.

MACHINE DESIGN A FACTOR. Fundamental points of attack are in the design of textile machines and the layout of processes. Bearings of close tolerances, employment of non-metallic gears, correct balance of rotating and reciprocating parts, all bring quieter operation—frequently along with a welcome reduction in maintenance costs. Until machine designers universally strive to attain maximum quietness of operation, the burden of reducing noise must fall on maintenance departments, which by tightening and lubricating properly can achieve surprising results with present machinery.

Process layout again offers fewer possibilities in textile mills than in other industries, although wider spacing of machines, even if only by two or three feet, has accomplished substantial reduction of noise intensity in the surrounding zone.

It should be remembered that statistical charts of the Acoustical Society of America show that with a reduction of only 5 decibels from an intensity-level of 90, the ear experiences a 34% reduction of loudness.

The many kinds of acoustical materials available to the noise-reduction engineer have specifications which adapt them to specific purposes, meeting considerations of fireproofing, dust, moisture and mechanical vibration, etc.

In general, materials are prefabricated blocks, boards, or blankets, made of a wide range of vegetable fibers, glass-wool, rock-wool, cork, and other materials. In new construction the plaster may be of a porous, sound-reducing type.

For noise-reduction in existing mills, tiles have the advantage of easy application over existing surfaces. Control of density during manufacture can adapt them to obtain maximum sound absorption in the range of sound frequencies which they will be called upon to combat. Low ceilings give better results than high, since there is less reflective wall space, and because noise is more quickly absorbed, lessening its spread.

With a 1-in. tile thickness, it is possible to obtain a .50 to .75 noise reduction coefficient. That index is the average of the percentage absorption of impinging sound-energy at standard frequencies. This, of course, achieves no reduction in air-borne noise direct from the source, which, in the concentrated machine-zone of a weave-room, is likely to defy attempts to bring it down to the comfort rating.

TEXTILE MILL REDUCES NOISE. A classic case cited by engineers, however, is the weave-room of a Georgia textile mill. A space 55 ft. wide running the entire 105-ft. length of the room contained 76 high-speed looms, mounted on rubber. At one side was a 45-ft.-wide working area and service aisle. After treatment with acoustical tile, the noise-level amid the looms was 96 decibels. But in the service area the noise level dropped to 82 decibels, a reduction of 68%. Since the employees were stationed here when not actually attending the looms, the relief afforded them was tremendous. The tile used has been unaffected by the 70% R. H. and the 86° F. temperature maintained. Lint is cleaned off frequently to avoid clogging the porosity upon which acoustical efficiency depends.

Thus, while there is no cure-all and no one easy method for achieving noise reduction, acoustical engineers have many resources at present; will have more in the future, from better materials, from incorporation of their ideas into factory design. Their accomplishments will be reflected in higher production and increased comfort.

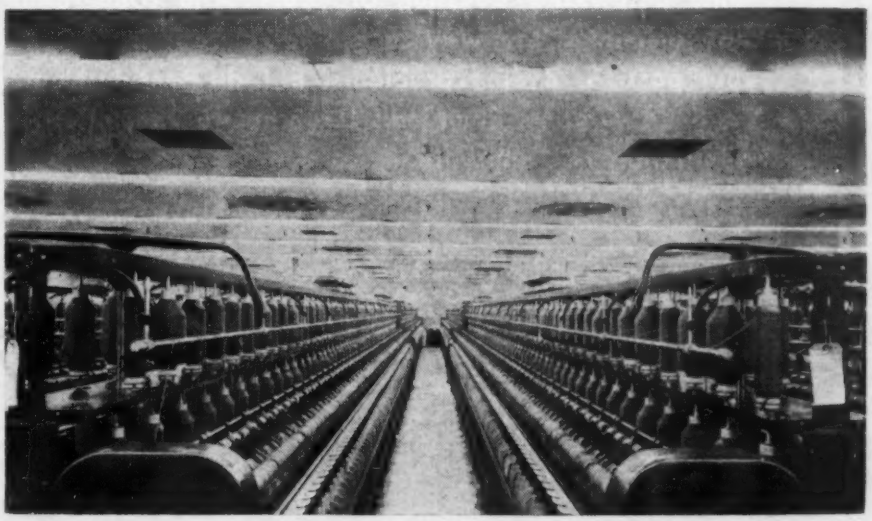
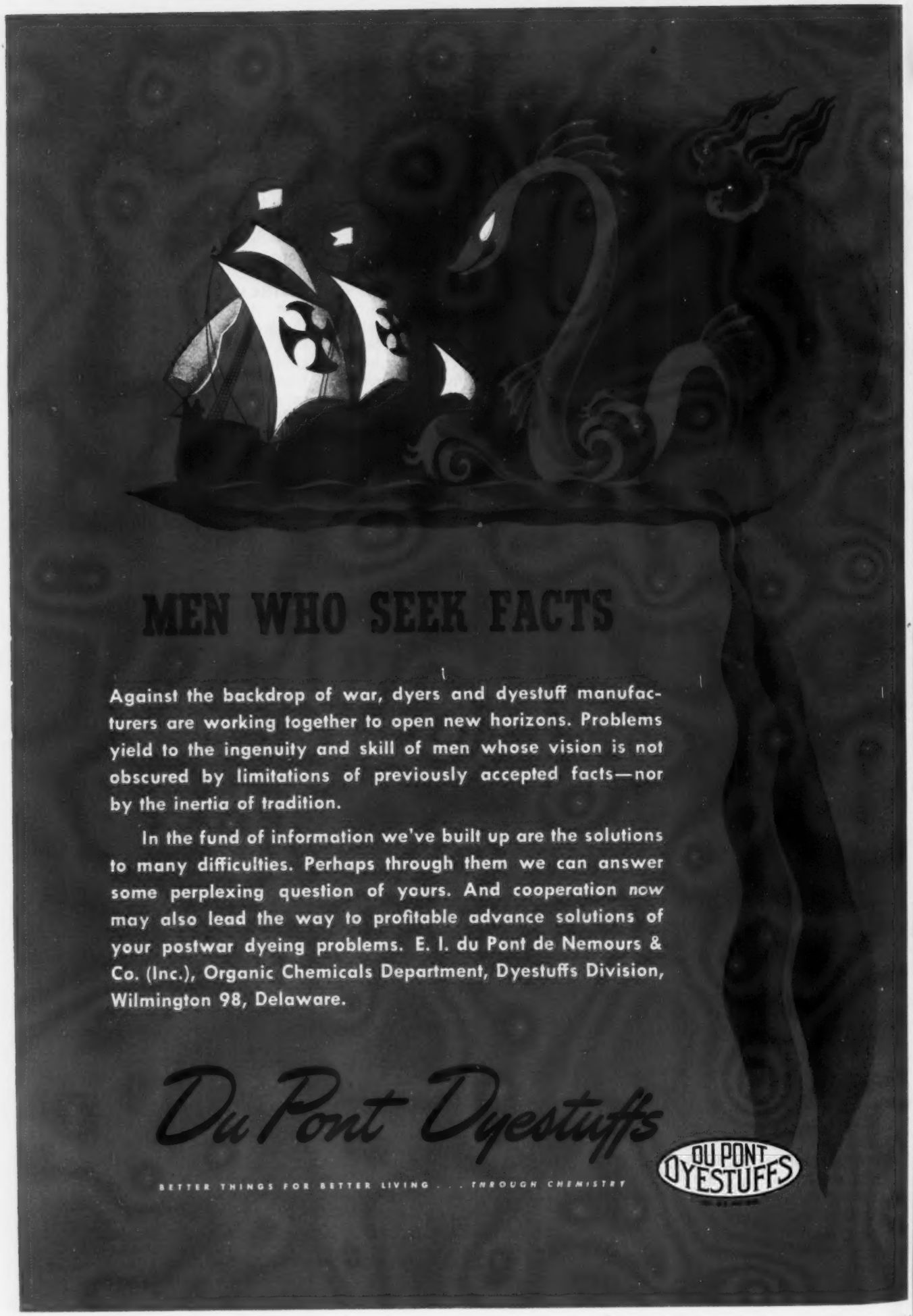


Fig. 2. Sound absorbing tile on ceiling brought relief by reducing the spreading of noise in spinning room. Note low ceiling height which assists in deadening noise by bringing acoustical absorption material closer to noise source.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MAGNETS Reduce Fires In Opener and Picker Rooms

HIGHLIGHTS: Study Shows Over 48% of Cotton-Mill Fires Start in Opening and Picking Operations—Rectangular Vertical-Faced Magnets Take Out Iron and Reduce Fires—U and J Ducts Assist in Trapping Foreign Material Passing Through Lines.

By T. O. OTT, Jr.
Southern Editor, TEXTILE WORLD

FIRES CONTINUE to occur in opener and picker-room machinery in spite of all ordinary precautions to prevent them. "Tramp" iron from the bale and other foreign materials capable of causing sparks in the opened cotton start many of these fires. While close supervision of the opening of bales and handling of waste helps reduce fires from metal scrap, some of these materials eventually get into the machinery to cause a fire or to damage an apron, a beater, a screen, or even a card lickerin.

An analysis of reports on cotton-mill fires made over a four-year period by the Associated Factory Mutual Fire Insurance Cos. shows that 48.79% of all fires were started in the opener and picker machinery. Of these fires, 76% were caused by sparks from foreign substances. The bulk of this material consisted of iron in the form of tie buckles, bale ties, stray nails, and bits of junk.

Losses due to fire can be more extensive than the loss of the cotton burned, the loss of production, and the labor of cleaning, repairing, and putting the machinery back into operation. Some cotton is singed; and unless great care is exercised in picking this stock and in cleaning it, specks may appear in the ultimate yarns. Where damage to aprons and beaters is extensive, production schedules can be badly disrupted with a resultant loss in production and increase in maintenance cost. Sometimes employees sustain painful burns from attempting to put out fires.

Reduction in the number of fires and the damage to machines from foreign particles in the cotton opener- and picker-room machinery can represent very tangible savings, and any apparatus or arrangement of machines that reduces the human factor in fire prevention is desirable.

The recently developed high-intensity electromagnet manufactured by the Dings Magnetic Separator Co., Milwaukee, Wis., has been introduced in a number of cotton mills in the South and, according to several mills visited, has resulted in considerable reduction of fires. In one of the mills of Textiles, Inc., Gastonia, N. C., fires in opener- and picker-room equipment had occurred on the average of about twelve a year, but only two chargeable to foreign metal were experienced in the two years after installation of the magnets. One mill that had used a high-intensity magnet for about four months experienced no fires in its opener-room machinery during that period. One mill superintendent looked upon his magnet installation as good fire insurance.

HIGH-INTENSITY MAGNET. A magnet such as the Dings' double-gap rectangular vertical-plate model is housed in a box-shaped steel case, and the magnetic face serves as one side of the duct line through which cotton passes by suction or air pressure. The working face is corrugated to give additional resistance to metallic particles. The dimensions of the magnet are such as to allow it to be installed between machines at critical points where fires are likely to occur. In a modern opener line, the preferred location of the magnet is at the end of the feed table just before cotton goes to the vertical opener or downstroke beater or other similar opener. In such installations, the position of the magnet is vertical

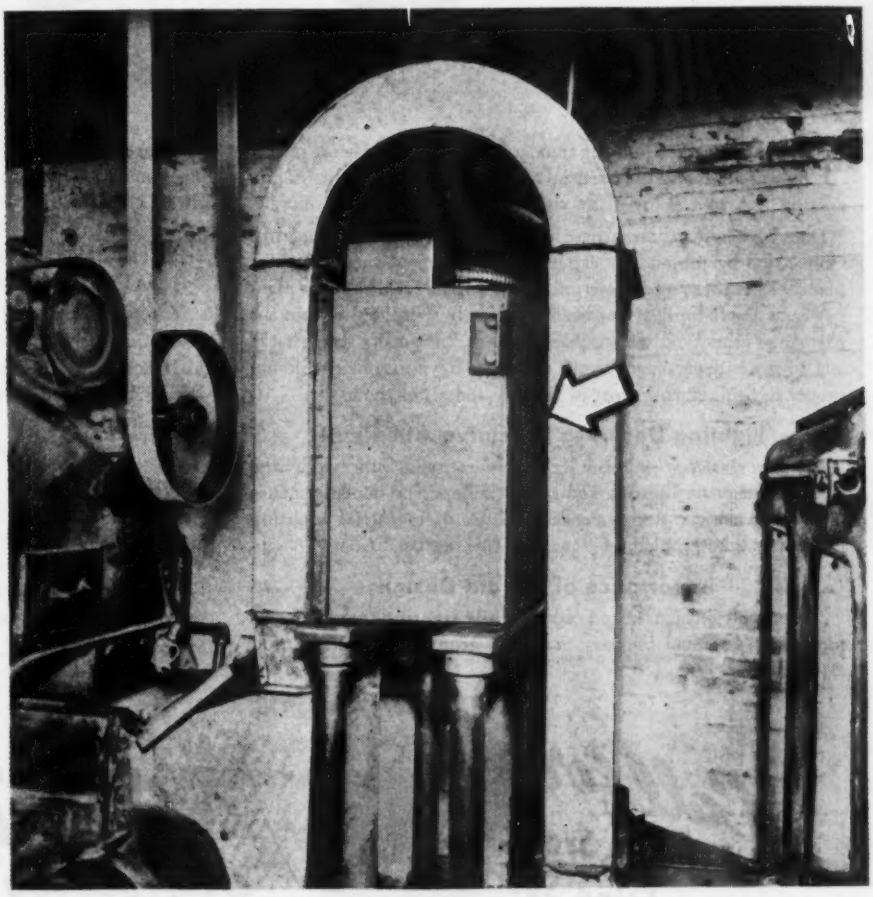

Fig. 1. Typical installation of magnet in vertical position in duct.

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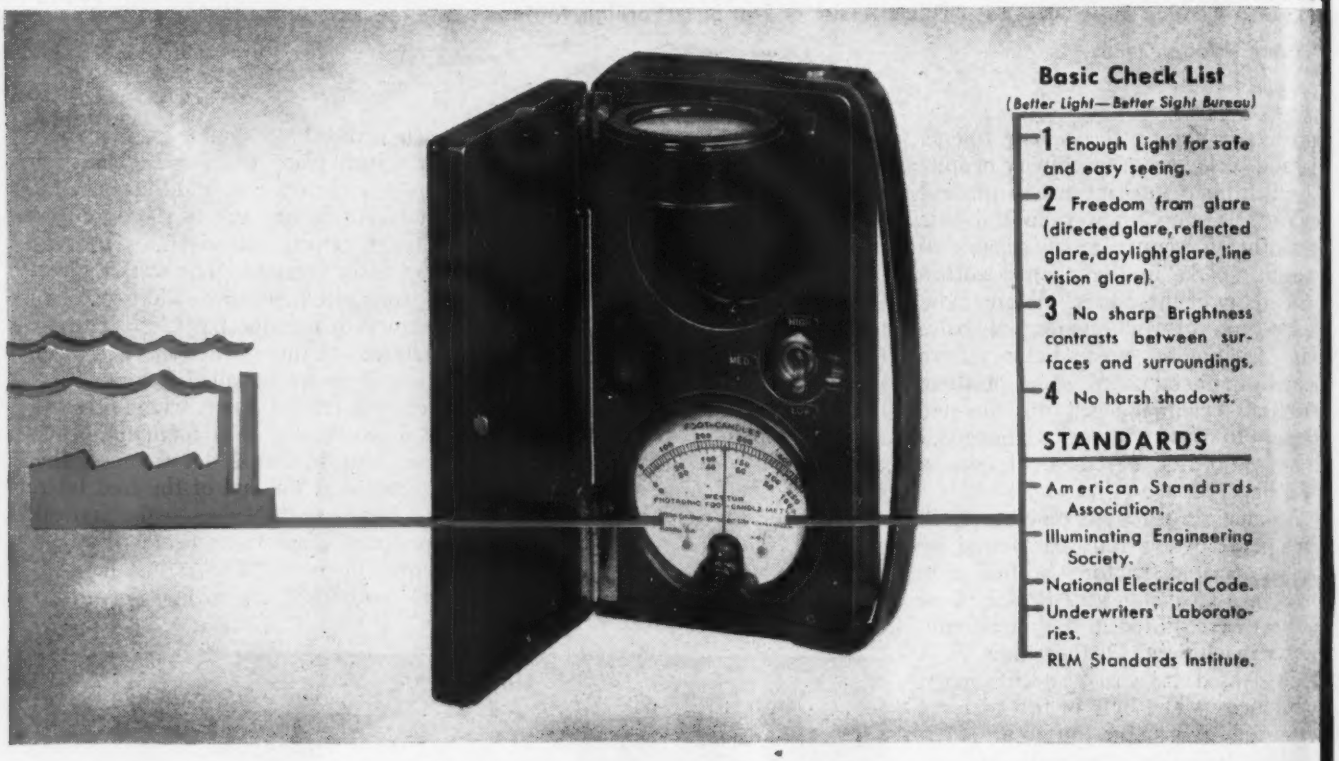
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and serves as one side of an inverted U-shaped or J-shaped duct conveying the cotton across the face of the magnet from bottom to top (Fig. 1). The shape of the duct gives added retardation to foreign material and serves to remove other foreign material not affected by the magnet. A trap in the pipe just below the magnet face allows the metal to drop out of the line of passage of the cotton when the current is cut off. Some magnets have been installed horizontally in conveyor ducts; but this position of the magnet is not so effective as the installations just described, because the trapping action of the U or J duct is not secured and gravity does not help remove metal from the line of passage of the cotton.

Fig. 2. Pieces of bale straps removed show effectiveness of magnet.

The method shown in Fig. 4 is used at Pacolet Mfg. Co., Pacolet, S. C., to remove the metal from cotton on a conveyor belt. For such situations, a special magnetic pulley is located below the belt, and automatic removal of the iron is accomplished as can be seen in the sketch. Metal is separated by this method because the magnetic pulley extracts it from the cotton and holds it fast to the belt until it is under the pulley. There it is forced off as the belt leaves the magnet. Such an installation is not so common as the one at Spartan Mills, Spartanburg, S. C., shown in Figs. 1 and 3.

Some of the "tramp" metal removed at one cotton mill is shown in Fig. 2. Examination of material removed at one plant showed nails, apron pins, a broken apron slat, a flyer presser, a shell roll, and a piece of bale tie. All of these would have been very likely to cause fire or machine damage. Indications are that those mills that mix their waste in the opener line have additional chances of introducing "tramp" metal from processes beyond the opening and picking.

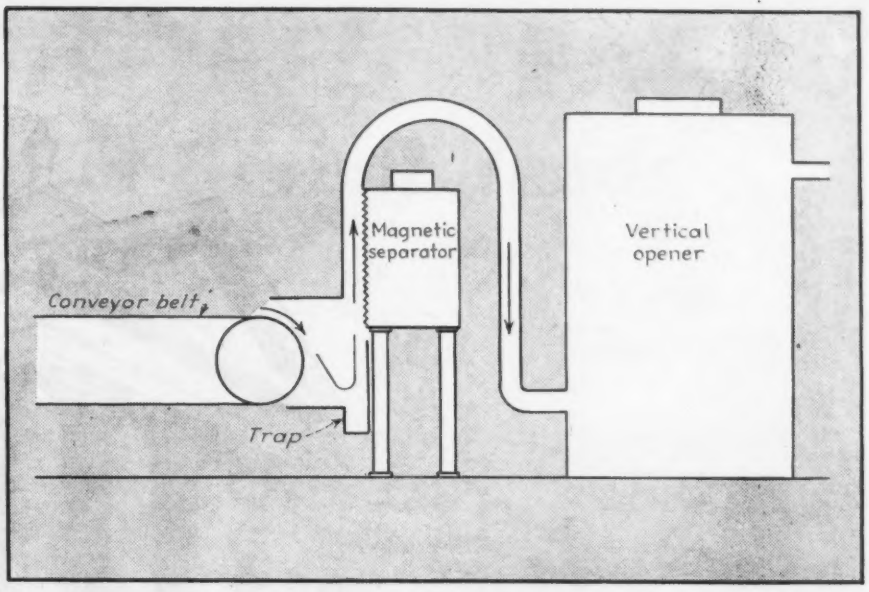

Fig. 3. Diagram of installation found suitable in modern opener lines.

The high-intensity magnet is operated from direct current; and where direct current is not available, motor-generator sets or rectifiers are required to convert alternating current to direct current. Such equipment can be supplied with the magnet.

When in use, the magnet provides a powerful pull across the full width of its face, and a corrugated bronze face plate prevents sparking when iron strikes the magnet. The gap between magnet poles is bridged by non-magnetic material to insure a dense flux penetration. The magnet is powerful enough to attract and hold iron whether installed vertically or horizontally.

MAINTENANCE. Operating costs of the magnet are small, and maintenance is practically nothing. Under ordinary conditions, the face of the magnet is cleaned once a shift. In magnets installed vertically with a trap, cleaning is accomplished by turning off the current and allowing the metal to drop into the trap by gravity. On some horizontal installations a door must be provided in the duct work through which iron may be removed by hand.

Cleaning and inspection periods will vary, depending upon the amount and condition of the material run past the magnet. Experience will indicate the proper interval.

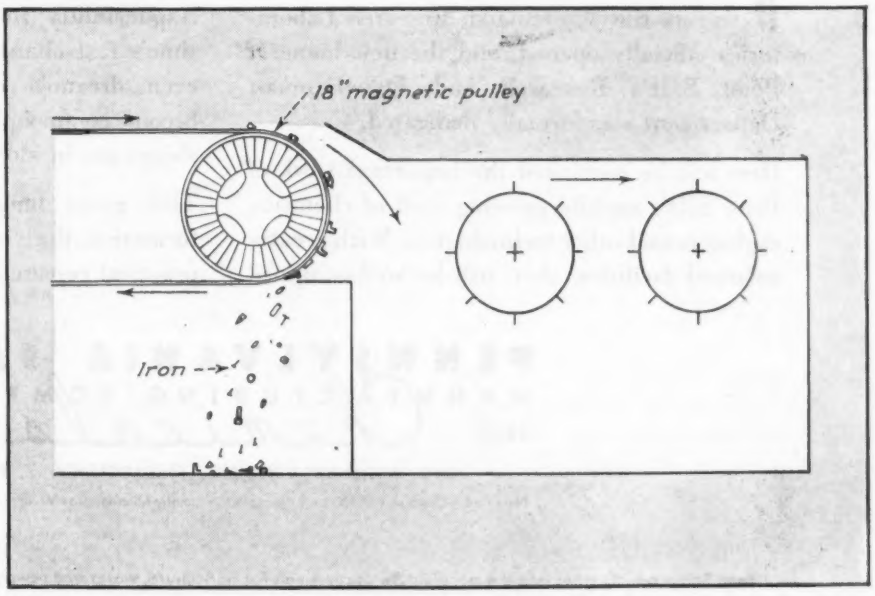

Fig. 4. Conveyor belt utilizes special magnet in pulley.

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DURING the first week of October, this doorway to the Whitemarsh Research Laboratories officially opened, and the new home of Penn Salt's Research and Development Department was formally dedicated.

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DIRECT-FIRED HEAT
For Textile Drying Needs

HIGHLIGHTS: Two Types of Heat Used—Proper Installation and Application Insure Efficient Results—Combination of Drying, Curing, and Solvent Removal Is Possible With Direct-Fired Ovens.

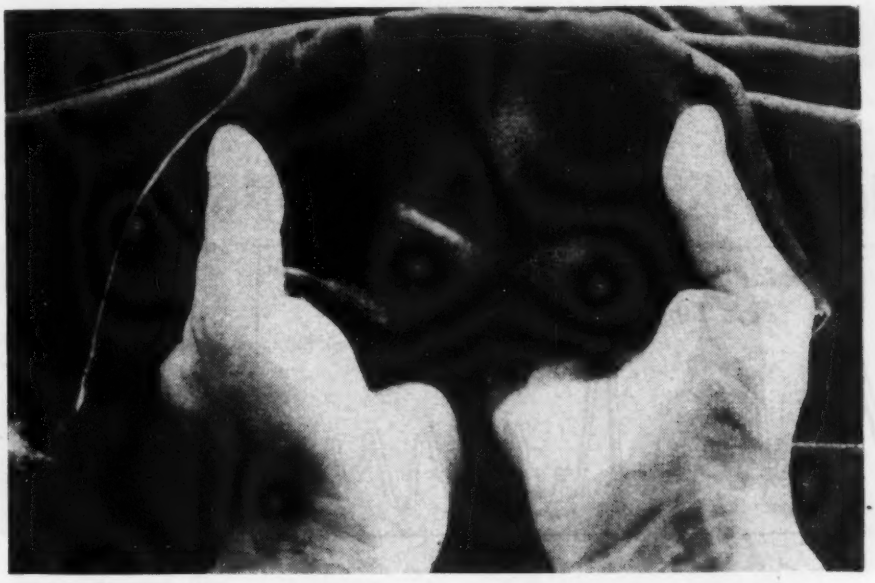
By C. A. FRENCH
Industrial Heat Engineering Co.
Greenville, S. C.

WHY BURN COAL, OIL, OR GAS to heat water, to make steam, to heat tube walls, to heat air, to dry cloth, when the fuel may be burned inside the drying oven and both the radiant and sensible heat be directly applied to the cloth?

For the last five or six years, this is a question that mill-owners, superintendents, mechanical supervisors, and others have been considering; with the result that a number of drying installations have been made, following up the idea of utilizing both radiant and sensible heat. At the moment, other installations are being considered. Those mills possessing dryers of this type have found the following advantages:

1. Considerable reduction in the size of the drying oven, and the space required.
2. Ovens built for any required speed.
3. Drying costs reduced by amounts varying from moderate to very substantial, depending upon the available fuels.
4. An improved loft of hand, especially noticeable on twills, pile fabrics, etc.
5. A decided reduction in shrinkage.
6. Drying gas oxygen-free and inert.
7. A greatly reduced first cost of installation, as compared to steam dryers, with their necessary collateral equipment.
8. Negligible maintenance costs, as these dryers possess only one moving part.
9. A comparatively small quantity of priority material for construction.
10. Thermal efficiencies of 80 to 90%, as compared to 20 to 50% in conventional steam-heated drying apparatus.
11. A completely independent unit, though it may be operated in conjunction with other drying equipment.

It should be clearly understood that these advantages can be obtained only from carefully-engineered drying ovens in which it is possible to make the fullest use of both the radiant and sensible heat. Groups of burners or lamps when placed so as to face a stack of dry-cans or under a tenter-frame lose some of their efficiency, since here only a part of the radiant heat is utilized. Much of the sensible heat that is generated by infra-red burners is also lost.



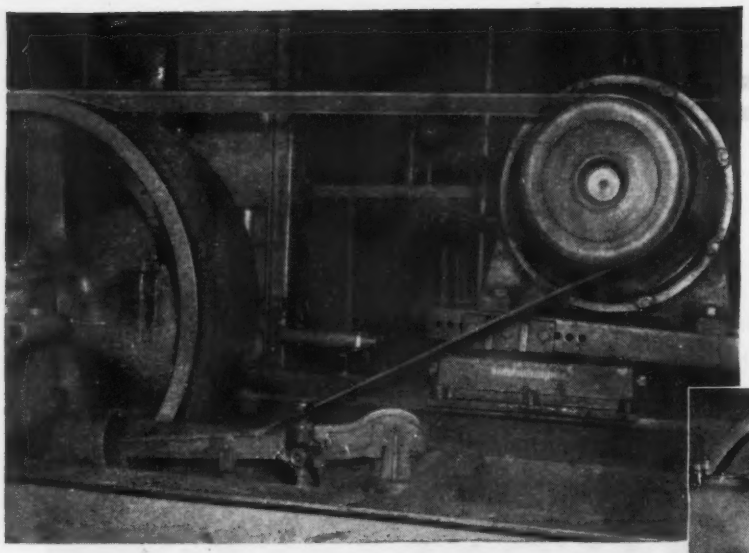
Improved loft of hand, especially on pile fabrics, often results from direct-fired dryers.

RADIANT AND SENSIBLE HEAT. It should be explained that by radiant heat is meant the radiations obtained in the near infra-red range of the spectrum. It is the effect of energy generated by an incandescent element and transferred directly to an object by radiation; hence, this radiation is not apparent in the form of heat until it has been intercepted and absorbed into the material to be heated.

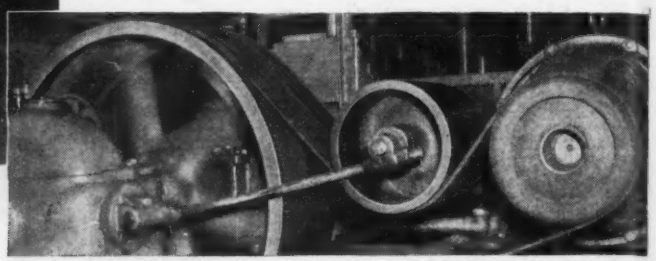
On the other hand, sensible heat is often known as convected. Heat energy in this form is transmitted directly from some material object to another. As an example, a fire gives off heat which may be imparted to air particles which may, in turn, impart this heat to another object.

The use of infra-red temperature-gradient burners is especially useful on the entering end of a drying unit where the cloth comes in wet. The reason for this is that the penetrating radiation from the burners almost instantaneously heats all the water in the cloth to evaporating temperature. Thus, the full evaporating rate is reached in one foot, or possibly less, of cloth travel. This almost instantaneous rise to evaporation temperature is in sharp contrast to the conventional type of dryer in which a much greater length of time is taken to bring wet cloth to the evaporating temperature. As cloth and water are both very poor conductors of heat, it therefore follows that it is possible to start evaporation much sooner than could be done with sensible heat acting only on the surface of the cloth.

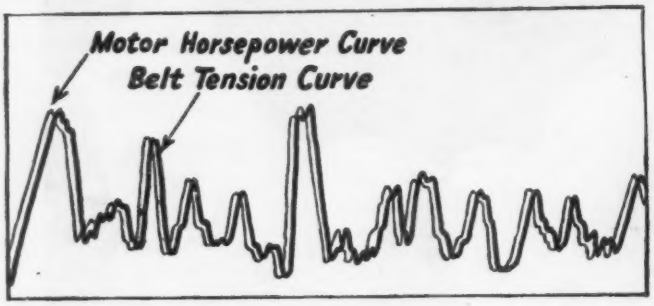
However, if the infra-red burners are not applied properly and if careful consideration is not given to their installation, the results can be disappointing. Much of the penetrating portion of the infra-red radiation often passes through the cloth and is lost, unless proper means are used to return these rays. As only a negligible amount of penetrating radiation comes from extremely high temperature surfaces,

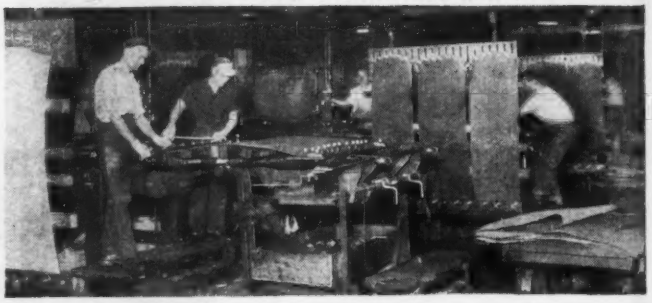


In this rubber plant, a leather belt replaced a rubber belt. On a compressor drive (48″ x 16″ pulley), the rubber belt, unsatisfactory, was replaced by a "Research" leather belt and the 100 HP, 870 R. P. M. motor (16″ x 15″ pulley) placed on a pivoted base. The gravity idler pulley which had caused trouble due to the idler arm bearing wearing and throwing the belt out of adjustment, was eliminated. The "Research" belt has required no servicing except for minor base adjustments.



No substitute can equal THIS . . . for short center drives





Put the motor on a pivoted base . . . belt the pulleys with a "Research" leather belt. The pivoted base will adjust belt tension automatically according to the load . . . saving unnecessary wear on belt and bearings. The flexible, high-friction "Research" belt will hug the small pulley with minimum slip and will take the continual flexing without excessive wear or waste of power. Will outlast a rubber V-belt on a corresponding drive by at least 2 to 1 . . . Shown above: G & K's exclusive prestretching according to hide characteristics, responsible for the non-stretch feature of "Research" belting.

Extra Values from "Research" Belting's

"DOUBLE PLUS"

(all that's *better* in leather, made *best* in "Research")

- **MORE PRODUCTION** with leather belts because of leather's superior traction, which improves with age.
- **MOST PRODUCTION** with "Research" because "Research" processing adds extra pulley grip. 3% more production guaranteed.
- **LESS MAINTENANCE** with leather belts because natural "give-and-take" handles shock loads without undue strain.
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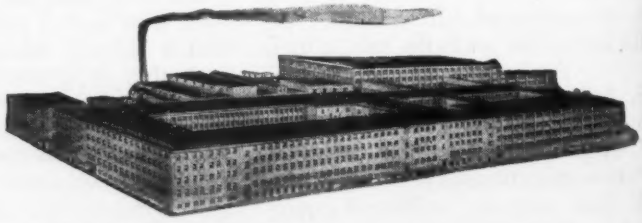
3% MORE PRODUCTION . . . 2 TO 4 TIMES LONGER LIFE . . . FROM "RESEARCH" BELTING'S DOUBLE PLUS



MORE UNIFORM results can be guaranteed because "Research" Belting is manufactured from green hide to finished belt under one roof, under one control, in the world's largest industrial leather plant.

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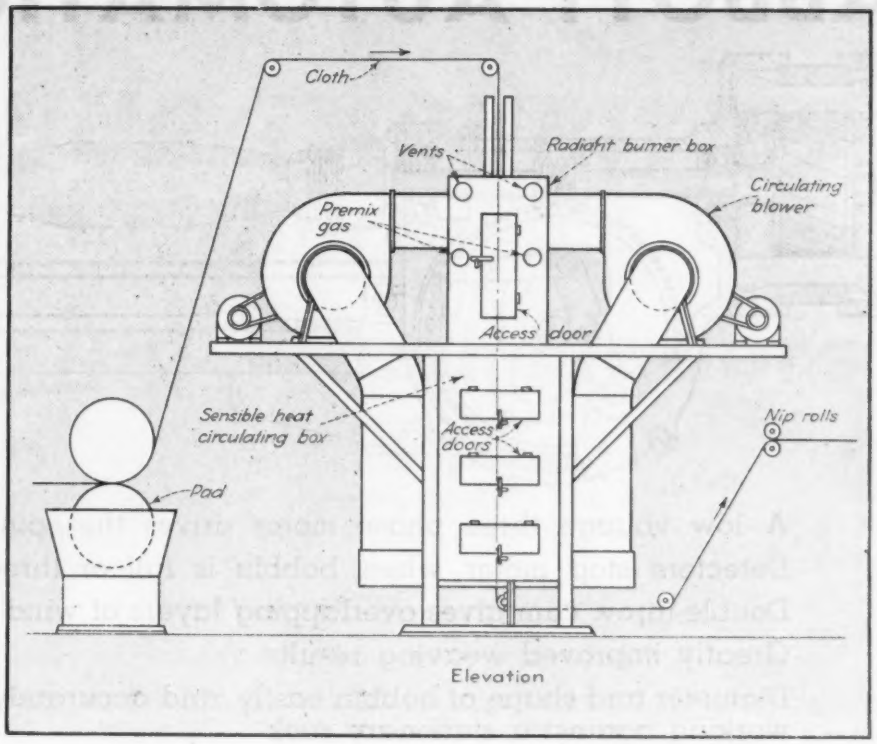
other means must be provided to secure an additional amount—hence the infra-red temperature-gradient burners. Still the radiant energy is only about 20% of the total energy released. Therefore, unless the sensible heat is used with high efficiency, a drying or curing unit of this type will be wasteful of fuel.

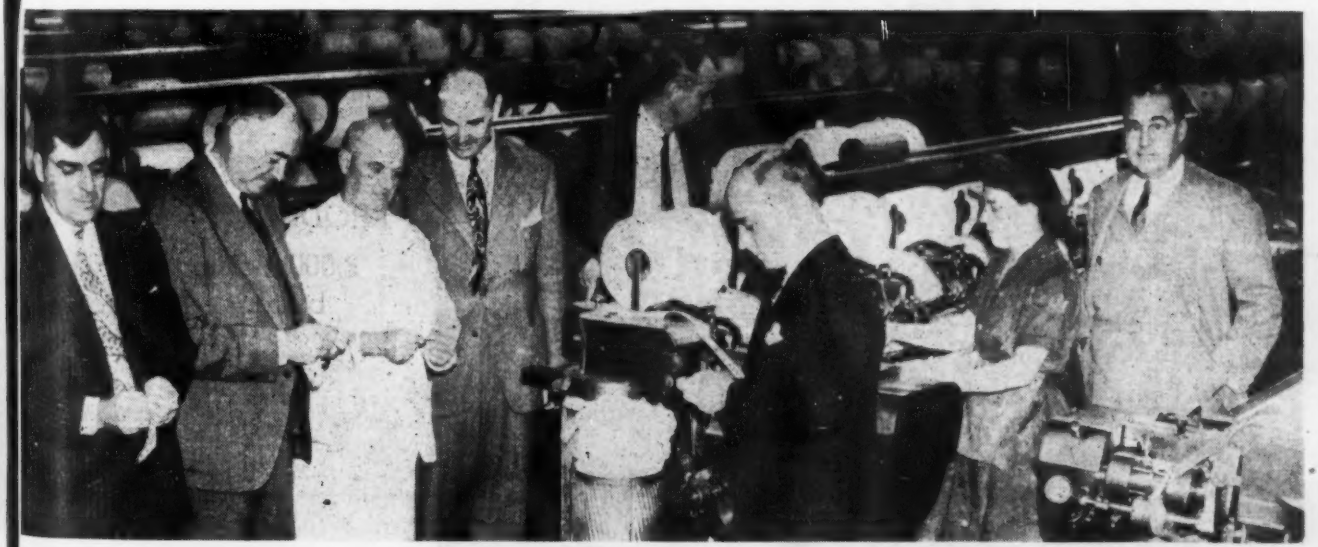
OVEN OPERATION. Under ideal conditions, the oven atmosphere should consist only of steam (formed from the water in the cloth), nitrogen, and carbon dioxide. The steam, due to the high oven temperatures, becomes superheated and acts as a drying gas. By means of an exhauster, these gases are forced into contact with the cloth. Most of the gases are then recirculated and reheated from a temperature of 210° F. to 800° F. and again contact the cloth. Since the dew-point in such a drying unit is in the neighborhood of 168° F., it can be seen that there is no danger of re-saturation of the cloth. The high temperatures (in the neighborhood of 800° F.) to which the wet cloth is subjected as it enters the dryers removes the water with extreme rapidity. As the cloth passes on through the dryers, it is contacted repeatedly by gases at progressively lower temperatures as its water content is still further reduced. The last few percent of moisture is removed at such a low temperature that the cloth could not be injured even if it were bone-dry. This type of drying system is intended to replace dry-cans and to be used in tenter drying. Depending upon the design and amount of equipment, drying speed is apparently unlimited.

The use of infra-red temperature-gradient burners, particularly in conjunction with a properly designed oven, is advantageous in preventing starch from baking-on, for instantaneous curing or polymerizing of pigment and resin dyes, and for a variety of water-repellent and resin finishes. Inflammable solvents can be removed rapidly, safely, and economically.

If desired, radiant direct-fired ovens can be designed for a combination of drying, curing, and solvent removal.

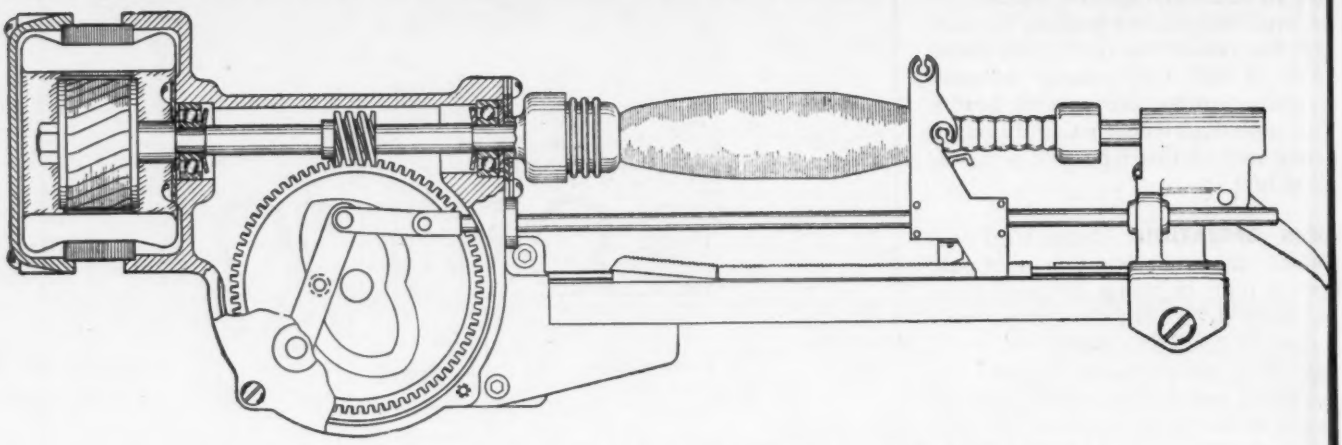


Latest design of direct-fired cloth dryer is diagramed here.



COTTON-TEXTILE MISSION to England shown while visiting a cotton mill in Lancashire. The mission, which has lately returned, in effect repays the visit to America of a British mission earlier in the year, and may have some bearing on WPB's interest in boosting European textile output to conserve the U. S. production for essential civil and military needs. With their English hosts, the mission members are (left to right): Walter S. Montgomery, president of Spartan Mills, Spartanburg, S. C., and vice-president of ACMA; J. H. Bolton, vice-president, Whitin Machine Works, Whitinsville, Mass.; Isreal Sankey, veteran Lancashire textile operative; George H. Lanier, Jr., director, Cotton & Synthetic Textiles Division of WPB, formerly of West Point Mfg. Co., West Point, Ga.; Thomas Bancroft, assistant director, Textile Clothing & Leather Bureau of WPB, formerly of Turner-Halsey Co., New York; Sir John Holden, manager of British spinning mill; woman operative; W. Frank Lowell, vice-president, Saco-Lowell Shops, Boston, Mass.

ABBOTT AUTOMATIC QUILLER



A low voltage three phase motor drives the spindle directly

Detectors stop motor when bobbin is full or thread breaks

Double-throw cam gives overlapping layers of wind

Greatly improved weaving results

Diameter and shape of bobbin easily and accurately controlled by feeler working against a stationary rack

Bunch is controlled by making one adjustment instead of adjusting all winding units.

Spindle speeds up to 5,000 RPM

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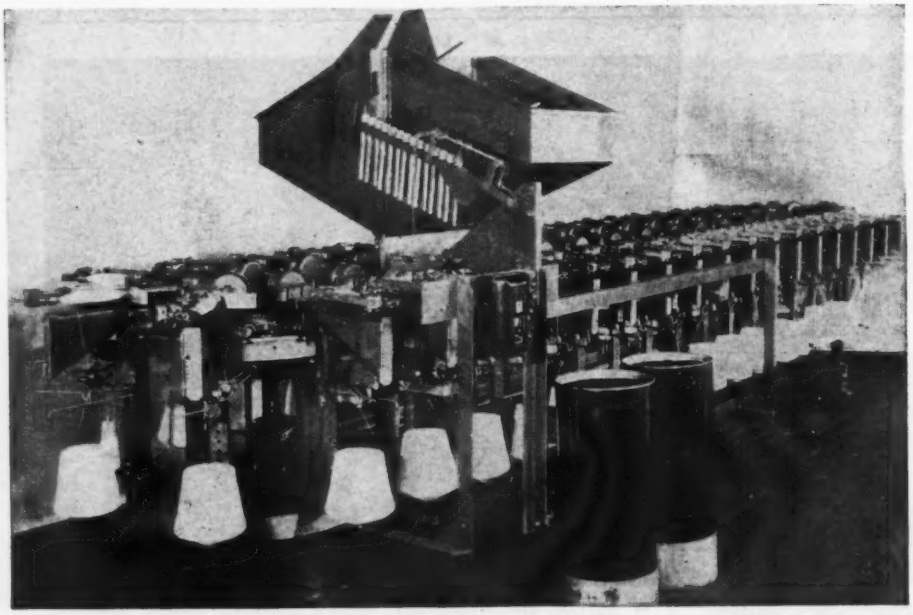
Empty bobbins poured into one large hopper and are sorted and fed automatically

Low investment cost due to simple construction of winding units and use of ONE automatic head to serve all spindles



PRODUCTION:

2,000 bobbins per hour by one operator

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

REMOVING IMPURITIES from Mercerizing Wash Liquors

HIGHLIGHTS: Recovered Caustic Used in Boiling-out Operations —Presence of Impurities Adds to Cost and May Cause Poor-Quality Work—Removal by Various Filtration Methods Found Feasible.

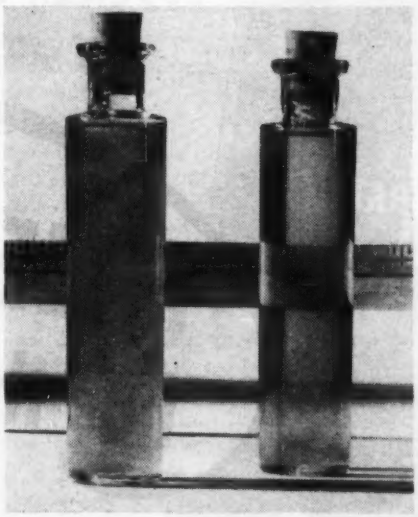
By C. NORRIS RABOLD
Chief Chemist, Union Bleachery, Greenville, S. C.

PRACTICALLY all finishing plants which operate mercerizing ranges now have some system whereby a portion of the caustic soda employed for mercerizing can be recovered. In most cases, this recovered caustic is used for kier-boiling and other scouring operations.

The amount recovered and the concentration of the solutions depend upon a number of factors: one, strength of mercerizing liquor; two, efficiency of recovery system; three, point at which recovery is stopped and wash water allowed to go to waste. As a result of these various factors, recovered caustic may vary in strength from as low as 6.0-7.0° Twaddell to as high as 12.0-20° Twaddell

Cloth nowadays is mercerized at many different stages in its preparation. Sometimes it is mercerized in the gray. Sometimes it is de-sized only before mercerizing. It may be boiled out, then mercerized. And it may be scoured, bleached, washed, and mercerized. These operations are performed both wet and dry.

IMPURITIES PRESENT. Depending on the condition the cloth is in when it passes through the mercerizing range, contamination of both the mercerizing caustic and the wash liquors occurs in varying degrees. The recovered caustic contains various quantities of pectins, starches, soaps, and waxes, plus a goodly portion of lint. These impurities in the recovered liquors may vary from as low as 0.25% to as high as 2.0% in quantity. Naturally, the soaps, some of the pectinous matter, and starches are in the



Mercerizing wash liquor before and after purification.

form of highly dispersed colloids, which in turn tend to emulsify themselves further, as well as part of the unsaponifiable waxes. Still, relatively large portions of the starches, pectins, and waxes, as well as the lint, remain in suspension in the form of a light flock.

After gray goods are boiled off with a solution of fresh caustic soda and a sample of the liquor is taken upon completion of this operation, all the impurities removed from the goods are in a relatively high state of dispersion. However, when the liquor cools, a noticeable amount of the suspended matter flocks out, and reheating does not seem to emulsify it. This same situation arises when goods are washed on the mercerizing range in order to remove the caustic. A sample of the hot solution would indicate that the impurities are well dispersed; but again, when the wash liquor is cooled, a sizeable flock is noticed, which does not re-emulsify on heating. Examination of this flocculent material shows it to be of a slimy, gummy nature; and once attached to cloth, it is extremely difficult to remove.

LOWER PREPARATION COST. It is common practice in boiling out operations to use various detergents, water-softening and scouring agents, along with the caustic soda. Where recovered mercerizing liquors are used as a source of alkali and contain quantities of flocculated impurities, it is necessary to use larger quantities of these emulsifying assistants in order to take care of the impurities already in suspension. This, of course, results in higher chemical costs. If they are not thoroughly emulsified so that they can be readily washed out in preparation, additional troubles can be expected in the bleaching and dyeing operations. Deposits of these materials are difficult to bleach out, leading to the employment of excess amounts of bleaching agents or to having the goods exposed to their action for an undue period of time. This may result in a lowering of tensile strength and a creation of oxycellulose. Dye goods containing traces of impurities may not shade well and may come up spotty and uneven.

It would seem, therefore, that efforts to remove the suspended pectins,

(*Continued on page 192*)

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Control of Minor Losses in MANPOWER AND MATERIALS

HIGHLIGHTS: Control of Small Losses in Manpower and Materials Requires On-the-Spot Action by Supervisors — Convenient Location of Fountains and Rest Rooms Saves Time—Loomfixers Should Not Oil — Machines Should Be Reset When Parts Are Replaced—Red Tape in Requisitioning Should Be Cut.

By **WILMER C. WESTBROOK**
Loomfixer

←The waste itself and the method of control should be weighed to see if elimination of the waste would actually constitute a saving.

A FREQUENT CAUSE of material waste is careless handling. Many operators do not regard the roving, yarn, or cloth they handle as something valuable, and consequently much of this material receives rough treatment. All employees should be taught the value of the material they handle.

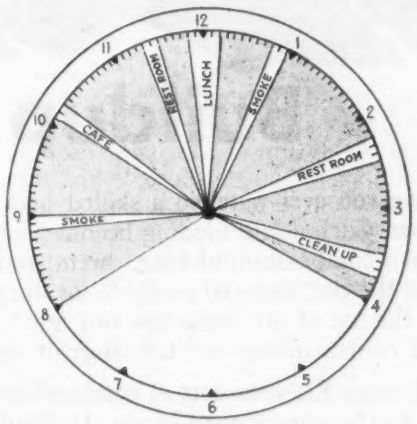
A bobbin falling from a truck is an accident, although at first glance it seems too trivial to mention. However, upon looking at such an incident through waste-conscious eyes, one finds that it assumes some importance. If the operator stoops to pick up the bobbin and place it back on the truck, his progress is halted for a moment and energy is expended which could well be spent on productive work.

For a more comprehensive picture of waste from this source, let us say that the bobbin was filled with yarn and was not immediately picked up, but rolled under a machine, where it became solid. The labor of plowing, planting, and hoeing the cotton plant; the picking, ginning, baling, and grading of the cotton; and the half-dozen processing operations from opening through spinning have been wasted. But that is not all; the bobbin is yet to be retrieved, and the yarn stripped from it and either sold as waste or re-processed into a low-grade yarn. Of course, that bobbin only held about an ounce of yarn; but multiply that little incident by the dozens that take place in each mill daily and the waste from this source will not seem so trivial.

WASTE OF MANPOWER. Loss due to waste of manpower is one of the biggest items and also one of the hardest to curtail. A government-sponsored survey has shown that the average worker is only 50% effective! A second hand usually knows the efficiency of each of his subordinates on the job, but does he know how much of the working day is spent on the job? A study made of a number of average textile workers revealed the fact they were spending approximately 1½ hr. off the job each day.

Of course, no employee is expected to stay right on the job all the time; but by providing convenient locations for drinking fountains, rest rooms, and the mill cafe, and by strict enforcement of rules regarding smoking (if permitted during working hours), the mill can eliminate much of this off-the-job waste.

USE HIS HIGHEST SKILL. A frequent waste of manpower is that of having a highly skilled and experienced worker do tasks that require little training and which could therefore be done by a semi-skilled hand at a lower wage. Take, for instance, the practice in some mills of having the loomfixer lubricate looms when the warps run out. He must leave whatever he



How the average cotton mill hand spends his working day.

happens to be doing at the moment, get an oil cup and grease gun, and perform a task which anyone with an hour's instruction could do as well. In fact, the job could probably be done better by a regular oiler; for the fixer, occupied with more intricate problems, often resents the interruption caused by this menial task and does a hasty and sloppy job of lubrication.

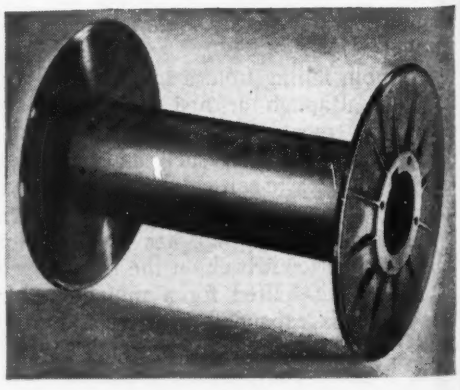
The reason often given for saddling the fixer with the oiling job is that it should be done by a responsible person. Anyone capable of performing a given task should also be capable of assuming responsibility. However, if it is felt that the looms might not be well lubricated, the warp hands could

Buildup for a Book . . .

Have you ever watched a skilled bookbinder decorate a fine Morocco cover? Such a fine binding becomes an artistic triumph only when you find a combination of long, careful training and skilled craftsmanship—plus the best material available for the purpose. The final result depends on the use of fine materials, but fine materials without skill, experience and craftsmanship will fall short of the ultimate goal desired.

It takes the same sort of combination to produce something outstanding in the way of warp beams. Hubbard Magnesium Alloy warp beams, for example, start out as Dow-metal, which brings the necessary metallurgical qualities to the job in hand. Hubbard's 32 years of experience supply the skill and craftsmanship that finally result in a perfectly balanced warp beam, rigid and strong, yet economically light in weight and smooth running.

You can profit by what Hubbard has learned about the design and manufacture of magnesium alloy warp beams, stainless steel spools and bobbins, and spools combining wood and steel. Get the facts about our complete line now, while you are planning for the future when greater economy and efficiency will count more than ever. Write us about your needs today.



Removable, interchangeable flanges offer these advantages: (1) heads or barrels may be salvaged if necessary; (2) conversion costs to larger size flanges are held to a minimum; (3) length of beams may be altered at little cost to meet production requirements.

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be instructed to check on this before tying the warp in.

As an example, let's say it takes an hour and a half to cut off the pattern, remove the empty beam, clean and lubricate the loom, tie in a full warp, draw in loose ends, set the harness, and doff the roll of cloth. By leaving the fixer completely out of the picture and having each of the other hands do their part of the job as quickly and efficiently as possible, we should be able to cut the time required by one-third. In a mill of 2,000 looms running three 48-hr. shifts and with each warp running six days, this half hour per loom would amount to approximately 1,000 hr., or the full-time production of seven looms, each week.

This same example, with variations, could be applied to doffing, beaming, or any operation which necessitates the stoppage of machinery.

A PLACE FOR EVERYTHING. Another waste is often caused by lack of clear designation of a place to keep things. Among the items which often must be searched for are these: boxes, roving cans, brooms, ladders, beam trucks, brushes, mops, spools of fillet, air hose, lease bars, and many others. Not only would a saving of time be accomplished by keeping such things in place, but also it would help keep aisles and corners clear and would facilitate a quick inventory.

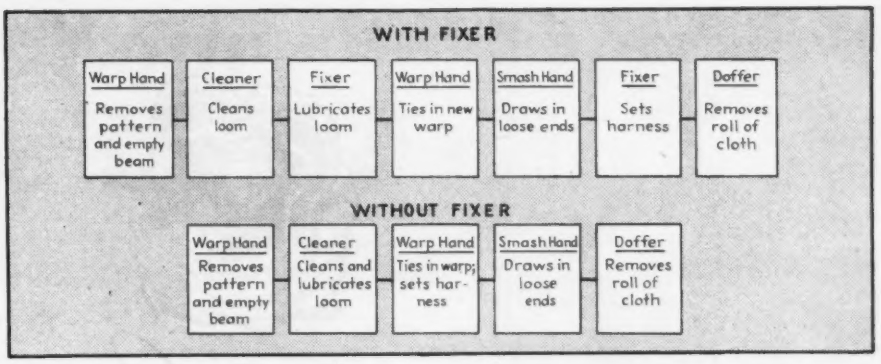
Most textile machines are the result of many years of experimentation and development. If a part breaks without showing undue signs of wear, either it or some related part was out of adjustment. A related part should be re-set before a new part is put on. Much waste results from bolting on a new part and starting the machine without first finding what caused the

Here is a typical machine accident which could have been prevented:

Fire started from an overheated loom motor and burned two warps before being put out. It was found that the motor became overloaded when some of the teeth were stripped in the chain of take-up-motion gears. This, in turn, was caused by the take-up-roll journals becoming so tight in the bearings the roll could not turn. A summary of the waste caused by this "accident" is as follows:

Loss of labor.....16 man-hours
Loss of production (looms only) ....48,000 picks
Loss of material...60,000 yards of yarn (also three gears and two bearings)

All this waste was caused by the lack of the few minutes' time and effort that should have been spent to clean the dirt and lint from the take-up-roll bearings and to put a small amount of oil in them.



The process of warping a loom is simplified by omitting the fixer. The chart above shows the operation conducted with and without the fixer.

MAINTENANCE SYSTEM. One of the best ways to prevent the waste of machinery and machine-time is to have a carefully drawn and executed system of maintenance. Many textile machines are, to a certain degree self-operating. This very fact often causes some small maladjustment to escape notice until it develops into a major break-down. For this reason, the fixers and overhaulers should have a program in which every part of every machine is given a periodical check-up and adjustment.

Sometimes a machine operator causes a loss of production or waste of machine parts by trying to do his own fixing. While lending a helping hand is a very commendable practice, it must be remembered that a smooth-running plant depends upon each one giving most of his attention to his own designated task.

RED TAPE TAKES MANPOWER. As stated before, many mills require the second hands or overseers to sign all requisitions for machine parts or other supplies. The purpose of this is to have them examine the old parts and thus prevent the discarding of anything which is still serviceable. How many supervisors actually examine such parts or even read the requisition to see what is being ordered? Just think how many miles are trod each day by fixers with their arms full of broken and worn-out parts in search of someone to sign a requisition, and how many times each day a second hand is interrupted by having one of these scraps of paper thrust into his face!

Wouldn't it be less wasteful of time and temper to have a supply clerk who knows something about machinery examine these discarded parts in the supply room? The fixers could get any part wanted by turning in the old part and a requisition signed by himself. Any doubtful parts with their accompanying requisitions could be placed in a special bin where they could be examined by the proper supervisors at their leisure.

Most minor losses in materials and production are caused by seemingly insignificant and often isolated occurrences. Only a few can be listed here, but the alert foreman should be able to ferret out many others. When a source of waste is found, the remedy is usually obvious.

Too much red tape wastes manpower. ***A place for everything saves time.***

ANNOUNCING *Lanaset* *

For WOOL SHRINKAGE CONTROL

Lanaset is a new product for controlling shrinkage of wool and wool blends.

A synthetic resin of the Melamine family, Lanaset is *added* to the fibre by impregnation — *it takes nothing away, destroys nothing.*

Lanaset controls wool shrinkage to a point that makes practicable repeated laundering or dry cleaning.

Lanaset reduces felting of wool fabrics to a minimum and prevents pilling and fuzzing.

Lanaset provides a stabilizing finish to wool and wool-blends, by which the original appearance and handle of the fabric are retained.

Lanaset is truly *the shrinkage control that lets the wool breathe.*

Lanaset has been tested with great success by a number of leading mills and finishers, and used by the United States Government. It is available now in quantities sufficient for practical plant trials.

Methods of applicatian are simple. Calco Technical Service Department will gladly advise mills and finishers on necessary procedure.

** The trade-mark of Calco Chemical Division, American Cyanamid Company, applied to a Melamine resin of its manufacture for use in wool shrinkage control.*

Calco

CALCO CHEMICAL DIVISION • AMERICAN CYANAMID COMPANY

BOUND BROOK, NEW JERSEY

NEW YORK BOSTON PHILADELPHIA PROVIDENCE CHARLOTTE CHICAGO

STEP-UP Your War-Bond Drives

HIGHLIGHTS: Mills Have Varying Success in War-Bond Drives—Management Must Show Its Interest—Methods Adopted for Successful Drives.

Treasury-flag presentation at Fort Mill plant of Springs Cotton Mills; H. P. Hamilton, of War Finance Commission for S.C., at microphone to left.

THAT WAR-BOND PURCHASE DRIVES have met with varying success in textile mills was apparent on examination of a report of standing and percent-of-payroll deduction in one large textile manufacturing area. This was borne out by spot checks in various southern textile centers. The chairman of one War-Bond sales committee explained that the success of sales was in direct relation to the interest the management took in the drives and the choice of the right group or person to push the sales of bonds in the plants.

In general, most mills have a payroll deduction plan in operation and the new employee is told about the plan when he signs up for work. It is the job of overseers and committees in the plant to get old employees to sign up, and to secure and maintain the sales each month. Most employees are willing to use the plan, but some prefer to save the money themselves and buy when ready. In a few cases employees want or need the money for other things and request their deducted funds. Some employees have even quit in order to get their money. On the whole, however, textile employees are now saving systematically and have large sums in War Bonds.

Cotton mills in the area surveyed range from 27 to 95% participation among employees, and bleacheries and finishing plants from 45 to 100%. This higher participation of bleacheries and finishing plants could not be attributed to anything but superior planning, interest, and effort in stimulating sales.

A SUCCESSFUL METHOD. One finishing plant official, whose plant has 100% participation and over 12% payroll deduction, explained that at the start he had picked a highly-respected employee to follow up on individual purchases, and then continually made it evident to the employees that the management was interested. This interest was shown by individual contact with employees, by running items on War-Bond sales in the plant paper, and by helping the employee keep his War Bonds under circumstances where illness or other legitimately heavy expense was involved. This mill has the Treasury "T" Award flag with a star, and has found it easy to maintain the high rating once it had reached a high mark.

Another point in this mill's program was not to overdo the pressure by putting on additional and intensive solicitation during periods of National War Bond Drives. It was felt that the high participation in regular monthly purchases is more important and that additional pressure might discourage those who are participating. Extra War Bonds are sold from time to time at this plant without a drive but the management feels that the regular purchase of War Bonds month by month is more important to the government than single purchases. Drives are utilized primarily to reach those not already participating and to lift still further the plant's high rating.

One textile mill covered in this survey reported that when each new employee is interviewed it is stressed to him or her how important it is to buy bonds. In every case so far, the management has been able to persuade the employee to purchase bonds, and for nearly a year and half now, 100% of the employees have been purchasing bonds at a rate averaging over 10% of the total payroll.

In the last War Bond drive this firm offered a barbecue for all the employees in the mill if the quota was met, and offered three prizes of $25, $15 and $10 for the three employees selling the most bonds. At this plant, total sales did not quite meet the quota but it was felt nevertheless that the promotion helped considerably. At another plant of this company, the plan worked exceptionally well, for against a quota of $12,500, sales of bonds totalled $26,960. Some of these employees did not hold their bonds, but the management, after checking with the local banks, believes the percentage is comparatively small.

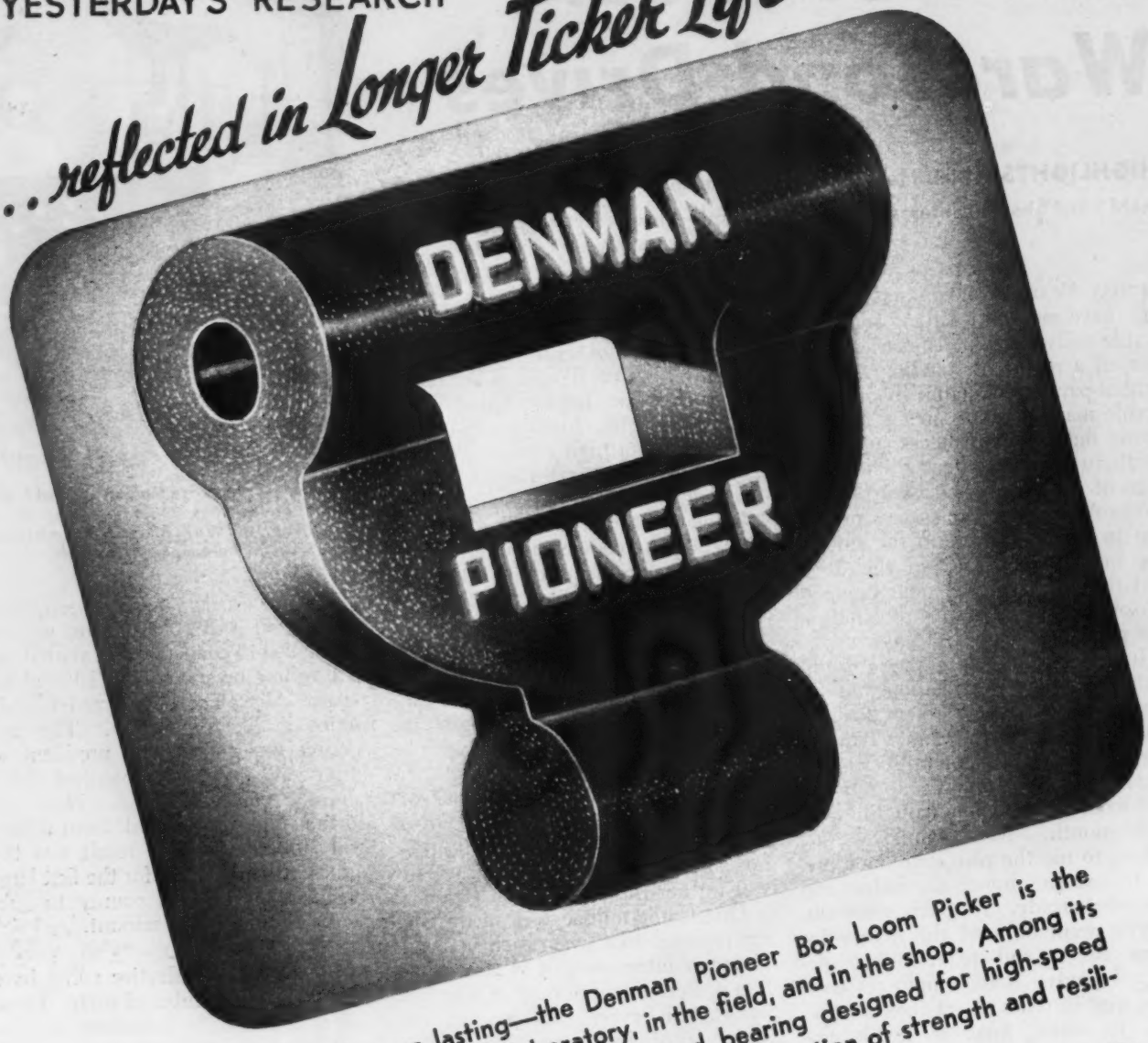
President of one mill was approached about working for the "T" Award flag, given when a minimum of 90% of the employees participate in subscriptions totalling at least 10% of gross payroll. He agreed to cooperate and started the ball rolling by subscribing 10% of his salary. His office boy agreed to subscribe in like proportion. The paymaster was told, "The president of this company has subscribed 10% and the office boy 10%. Now talk to the employees and ask them if they will subscribe." The result was the award of the "T" flag for the first large organization in that county to subscribe the necessary amount.

BOND RALLIES. Effective rallies have been held at a number of mills. These rallies are usually organized by the area bond-committee chairman in cooperation with the mill management and the employees. Meeting places are selected, the bond chairman arranges for speakers, and workers are invited to attend. This, like all other methods, requires more than casual interest on the part of management in order to be successful.

Notices in the plant papers telling of War Bond quotas and sales can stimulate friendly competition between plants of the same organization. Exchange of information on bond sales between mills, and the publishing of facts and figures about mill bond-sales in local newspapers create a competitive spirit among plants not of the same management. Publicity of "T" Award ceremonies also has a stimulating effect. Competition between departments in one mill, or between individual solicitors helps, as do posters and charts. The familiar thermometer to record the campaign progress is a helpful dramatization.

YESTERDAY'S RESEARCH

...reflected in Longer Picker Life today



Rugged, uniform, and longer lasting—the Denman Pioneer Box Loom Picker is the product of years of research in the laboratory, in the field, and in the shop. Among its exclusive features are—Denman's special slide rod bearing designed for high-speed operation; uniform center-to-center distance; and a combination of strength and resiliency unequalled in picker engineering.

Denman Pioneer is not only the most thoroughly proved rubberized fabric picker — its outstanding service record establishes and proves its claim of LOWEST COST PER LOOM PER YEAR.

Made by DENMAN TIRE AND RUBBER COMPANY
***Manufacturers of the* FAMOUS DENMAN LOOP PICKERS**

Exclusive Sales Representative

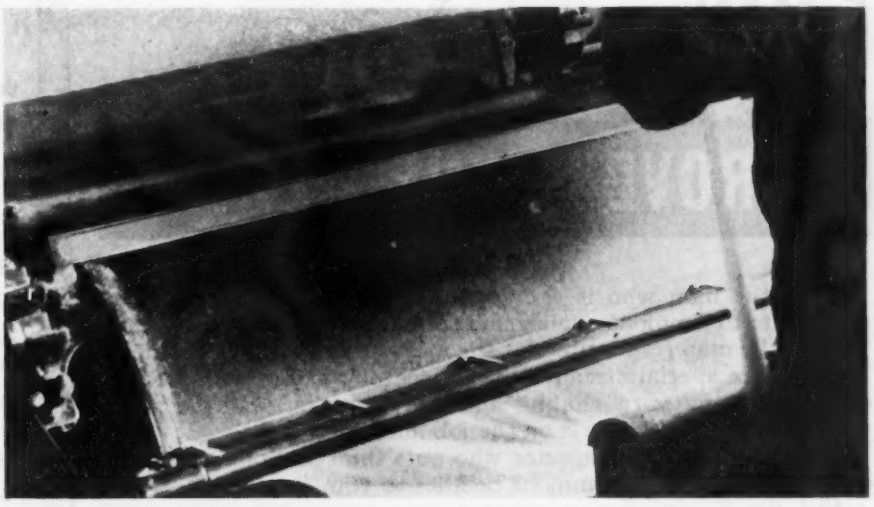
The TERRELL MACHINE CO., *Inc.*

CHARLOTTE, NORTH CAROLINA

SYNTHETICS Are Discussed at Three Association Meetings

HIGHLIGHTS: Virginia-Northern North Carolina Division, STA, Focuses Attention on Rayon Staples—South Carolina Division Hears Machinery Men—Gaston County, N. C., Group Told of Vocational Textile School.

THREE SOUTHERN TEXTILE Association meetings last month all featured or brought into prominence the use of synthetic staple on cotton spinning machinery. The longer-length synthetic staples require technics and machinery somewhat different from those employed for cotton. Blending problems also often arise when a mill runs more than one rayon staple or when rayon is combined with natural fibers.



Regular flat-top cards are suitable for the shorter lengths of rayon staple.

SPRAY, N. C., MEETING. At the fall meeting of the Virginia-Northern North Carolina Division of the STA, September 30, at Spray, N. C., F. S. Culpepper, of the American Viscose Corp., outlined the handling of rayon staple from the blending operation through the spinning; H. W. Whitcomb, assistant manager, Marshall Field & Co., explained the organization and plans of the various research organizations that have been begun or expanded for the benefit of the textile industry; and Elliot B. Groover, head of the yarn department of North Carolina State Textile School, discussed the processing of rayon staple on the cotton system and predicted some of the possible developments of machinery in this field.

Cotton mills are still the largest users of rayon staple in this country, Mr. Culpepper said. In 1943 a total of 163,000,000 lb. was manufactured and used. Since rayon staple is subjected to a mild opening treatment by the producer, it is not necessary for the mills to subject it to as severe an opening treatment as is given to cotton. It is well, however, to cross-blend from as many bales as possible.

As to the method of blending more than one fiber, first consideration should be given to the characteristics of the fibers to be blended. Cotton and rayon staple should be blended after carding in order that the picking and carding processes can be carried out correctly for each fiber. These fibers are quite different from the standpoint of cleanliness. Blends such as viscose and acetate staple, and wool and rayon staple, are most frequently made before picking; while viscose and acetate staple blends require no previous treatment other than would be given viscose staple.

Mr. Groover, who has had mill experience on rayon staple, explained a method worked out at his mill whereby the feeding of the rayon from the hopper on the breaker picker was controlled more accurately. After this operation, a finisher picker with space for six laps to be fed is used. This permits good flexibility in making blends.

Developments will probably lead to improvement in the blending and picking operation whereby these processes will be better coordinated and controlled in a one-process unit, he said. There should be a further development of the recirculation idea on pickers, and there is a definite margin for improvement in freedom from splitting of laps made of coarse fibers.

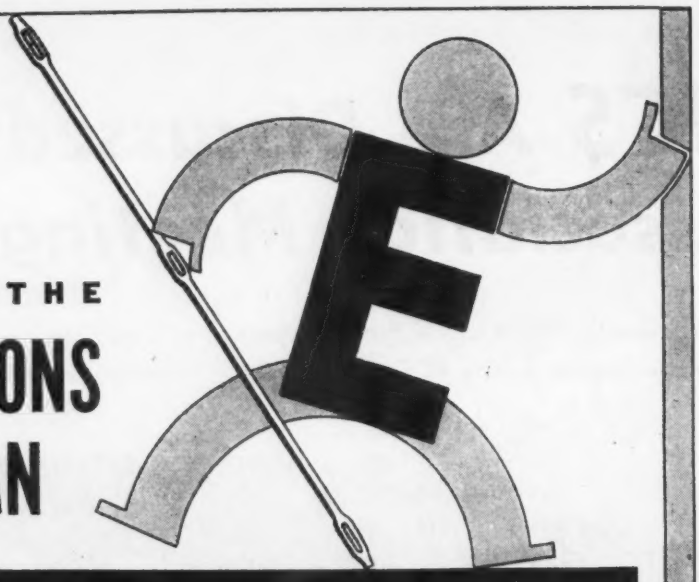
It has definitely been established that for general practice, the roller-top card is best for long fibers, say 2 in. and over; for weak fibers; and for the extremely coarse fibers. Known advantages of the roller-top card on the fibers specified are the following: reduced staple breakage, freedom from waste, ease of maintenance, and improved blending action. Roller-top cards are high producers, but whether the neppiness and blending can compare to flat-top cards is still a question.

For medium- or short-length staple, almost any roving frame can do good work. It is generally recognized that drafting efficiency is sacrificed if the drafting mechanism is designed for extreme variations in staple.

Cotton-mill executives are trying to decide whether they should get into rayon-staple yarns, what machinery will be available, whether the machinery must be for both cotton and rayon staple, and whether cotton and rayon machinery will be flexible enough for 100% production on either staple.

While Mr. Groover did not predict radical changes in equipment after the machinery manufacturers bring out postwar models, he indicated that there would be greater use of antifriction bearings, including impregnated metal; improvements in machine-shop practices to make better machinery; more attention to design to allow easier cleaning or to eliminate cleaning; more pleasing design and use of dynamic and optonic painting; large packages; and higher speeds where power costs do not conflict.

S. C. SECTION. Improvements that have been made and developments that are expected in carding and spin-



HOW THE

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IMPROVES YOUR WEAVING

Meet the man who is the composite of all the persons who contribute to Emmons quality and service.

He is the man responsible for the extra smoothness of Emmons heddles, the special streamlined surface of the Emmons heddle eye, preventing yarn chafing and warp breaks, and the rust-resistant coat that keeps it on the job longer.

He is the Emmons inspector who puts the "Seal of Certainty" on every shipment of Emmons heddles to you.

And the E-man is also the Emmons representative in your territory, ready to give you today, the prompt and helpful service of an experienced millman. Call on him—and write "Emmons" on your next order for the heddles that save weaving troubles, lower weaving costs.

BE CERTAIN...BUY CERTIFIED

EMMONS LOOM HARNESS COMPANY

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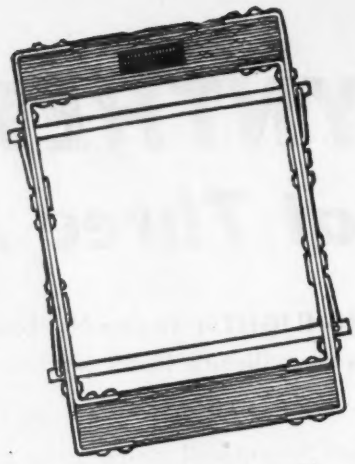
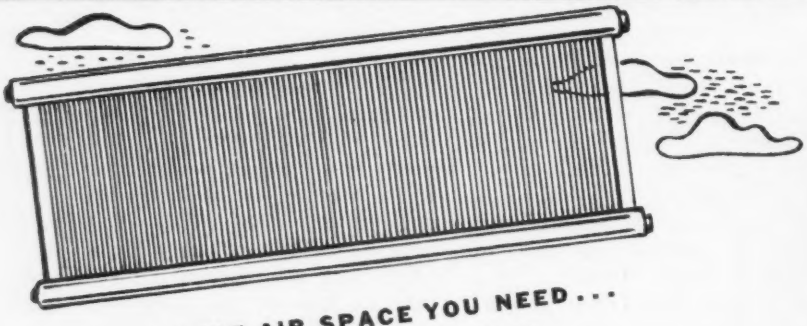


WE HAVE CONSISTENTLY IMPROVED THIS HEDDLE FRAME

Heddle frame performance is the result of a combination of details. In the improved Emmons frame, for instance, an extra number of rolled rivets are placed exactly where strength is needed most. Then, it's also a matter of hand-picked, knotless lumber, with two protective coats, plus a special rust-resistant finish for metal parts. The results can be *seen* in less vibration, a sturdy life, without buckling or binding, no matter how fast you will be apt to run them.

Look for this seal. If it's there on your next shipment of loom harness equipment, it means an E-man Inspector checked it with care before it left our plant.



ALL THE AIR SPACE YOU NEED . . . WITHOUT LOSS OF RIGIDITY

Free warp movement is essential, especially when looms are in continuous operation, but it naturally must be obtained without loss of rigidity. Emmons reeds, air-spaced up to 70% if desired, are made under rules of *controlled* manufacture, insuring accurate spacing and smooth dents. The proof? A test sample—your next replacement order.

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Lawrence, Mass., and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2543) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 52 Vanderbilt Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

ARGENTINA, Buenos Aires: Roberto Zander, 345 Juan Juares. BRAZIL, Rio de Janeiro: A. Polak, Caixa Postal 362. CHILE Santiago: W. L. Robinson, Casilla 2025. COLOMBIA, Medellin: C. E. Haraby & Co., P. O. Box 139. CUBA, Havana: J. N. Perez-Pena, Box 1611. MEXICO, Mexico City, D. F.: Leo Lenk, Apartado 533. PERU, Lima: Constantino N. Sabal, P. O. Box 2288. VENEZUELA, Caracas: N. Marvez, Apartado 391.

ning machinery were highlighted for the carders and spinners of the South Carolina section of STA by R. J. McConnell, vice-president of Whitin Machine Works, and R. M. Jones, chief engineer of Saco-Lowell Shops. Ernest H. Dreher, textile engineer, American Viscose Corp., outlined some of the fundamentals in spinning rayon staple on the cotton system. Discussion under the leadership of John M. Caughman, superintendent of Spartan Mills, Spartanburg, was limited to six questions sent in by members of the association.

Mr. McConnell said that one-half of the machinery in the textile industry is over 30 years old and that one-half the spindles are band driven.

In speaking of the development of machinery for rayon staple, Mr. McConnell told the group that a full line of carding and spinning machinery is being operated by Montreal Cottons, Ltd., for staples up to 3-in. Tests with rayon staple indicate that yarns up to 310s can be made experimentally, but the practical limit will probably be around 200s.

Opener- and picker-room developments in the past decade or so were described by Mr. McConnell. He pointed out that the use of a feed table and a number of small-capacity feeders has made it possible to secure better cleaning and blending because of the smaller bunches made in breaking up the stock with these feeders. Return-air filters have made it possible to humidify the opener and picker room and eliminate back pressure which causes uneven laps.

Mr. Jones, in speaking of past developments in cotton-mill machinery, pointed out the improvements in opener-picker room blending.

The revolving flat-top card is good for rayon staple up to 1⅜-in. On staple of 2 in. and longer the roller-top card is recommended. Standard cotton revolving-flat cards can be converted to the roller type by removing the flats and substituting the rollers. Stripping and cleaning on this card is very simple.

Long-draft roving has been developed by his company, according to Mr. Jones, and the 3-over-4 controlled-draft frame makes a very flexible machine for long and short fibers. The trend is to finer rovings and larger packages.

Mr. Dreher spoke of the Truslow blending set-up for cotton and rayon blends and of the use of different blends.

Running rayon staple on the cotton system requires careful mixing and blending; adjustments of beater, fan, and lickerin speeds; reduction of calender-roll pressures; less twist and tension; and more attention to housekeeping and maintenance.

Mr. Caughman, acting chairman, conducted the discussion period. Doffer speeds, rules for determining doffer-comb speed, temperatures in comb box, and wear on doffer clothing were discussed. One mill operates its doffer comb at 1,400 to 1,600 r.p.m. with an oil temperature of 116-118° F. Several mills had experimented with lower doffer speeds; 1,050, 1,100, 1,150 r.p.m. The mill using the 1,050 speed had noted a 20° F. drop in the temperature of oil in the comb box and had lengthened the oiling interval. Mr. McConnell said the 116-118° F. temperature was safe, and the rule of 125 times the doffer r.p.m. did not hold for some doffer speeds. Mr. Dreher reported experimental doffer-comb speeds up to 2,200 r.p.m. He said the speeds required depend upon the staple and denier used.

Experience with perforated screens on cards was varied. George R. Kay, of Pacific Mills, said that on a test run he had noted more strips, with less fly on back and front. Walter H. Regnery, Jr., of Joanna Mills, said that he had tried the perforated screen and had noted more uniform fly waste and ½% reduction in fly waste. He could not tell about the reduction in strips as a continuous stripping roll was used on the card.

To prevent sloughing of yarn being wound at spoolers it was the consensus that in spinning the ring rail should be run up fast and down slow.

Other officers of the association present were the following: Joe C. Cobb, superintendent and vice-president of Startex Mills, Tucapan, S. C., president; Marshall Dilling, executive secretary; W. W. Splawn, supervisor of spinning, Pelzer Mills, Pelzer, S. C., chairman South Carolina Division, STA. Mr. Caughman, of Spartan Mills, was elected group chairman.

GASTON COUNTY STA. The organization and purposes of the North Carolina State Vocational Textile School at Belmont was explained by Tilden W. Bridges to the Gaston County Group of the Southern Textile Association at its Gastonia meeting Sept. 15.

Mr. Bridges explained to the group that youths of high-school age preparing for the textile industry and older workers in textile plants who want to improve their general and textile education would be candidates for admission. Other youths who have completed high school and who want to prepare for industry would also be candidates, although at present this latter group is practically non-existent due to the war.

H. Gilmer Winget, chairman of the group, introduced Mr. David Clark of the *Textile Bulletin* who talked to the group on the postwar outlook for the combed-yarn industry. Mr. Clark stated that if production went back to prewar levels of 50% productive capacity, the combed-yarn group must of necessity turn to the manufacture of yarns from synthetic fibers.

Joseph R. Bentert, new head of the knitting department at North Carolina State Textile School, told the group of recent experiences which show that cotton hosiery can be strengthened by the addition of small amounts of synthetic fibers, such as nylon, at critical wearing points. Three times the normal wear could thus be obtained. He explained that this would naturally mean additional inroads into cotton consumption.

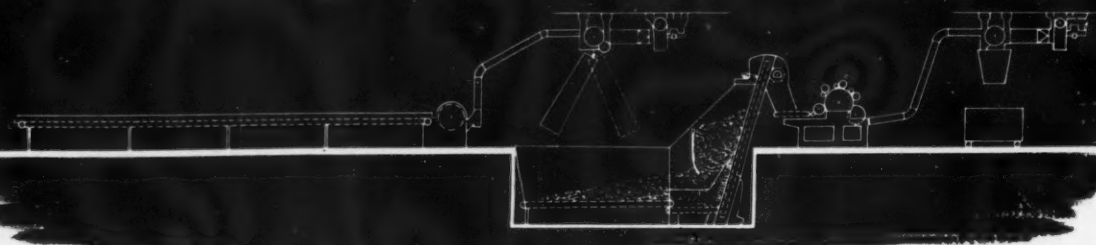
Mr. Bentert has been visiting knitting mills in the state to become acquainted with the problems of the knitters. Much of his time will be given to aiding in the solution of their problems. He said that plans have been completed at the North Carolina State Textile School to re-equip the knitting department with the latest circular and full-fashioned knitting machines.

NEW OFFICERS

New officers for the Virginia-Northern North Carolina Division, STA, are: Smith Crow, general superintendent, Erlanger Mills, Lexington, N. C., chairman; S. T. Anderson, manager of the Bedspread Mill, Marshall Field & Co., Leaksville, N. C., vice chairman; and Howard Barton, superintendent of the Rayon Mill, Marshall Field & Co., secretary. Those elected to the executive committee for three years were: W. A. Carpenter, general overseer, Erwin Cotton Mills, Cooleemee, N. C.; D. A. Parcell, superintendent of the Blanket Mill, Marshall Field & Co., Draper, N. C.; and C. F. Phillips, superintendent, Revolution Cotton Mills, Greensboro, N. C. Those chosen for two years were: W. A. Blackwood, assistant manager, Washington Mills Co., Mayodan, N. C., and G. R. Ward, superintendent, Cloverdale Dye Works, High Point, N. C.

Achieve New Uniformity, Increase Production with the

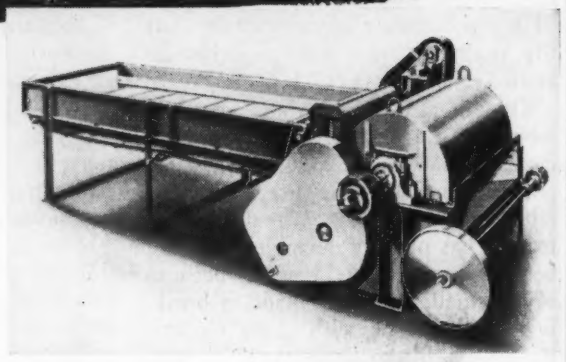
PROCTOR
CONTINUOUS BLENDING SYSTEM



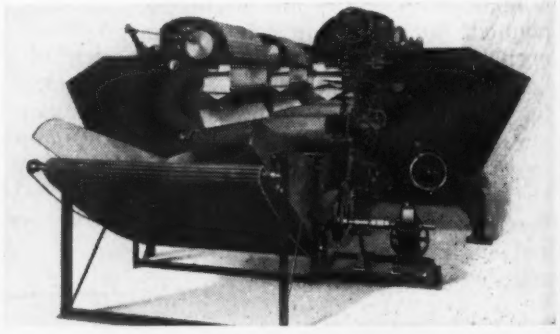
The Continuous Blending System illustrated is a development of the work done by the Proctor Super Picker and is based on the high productive capacity of this machine. This picker has a rated output of 4000 to 6000 pounds per hour. The system may be semi or fully automatic.

For semi-automatic operation the picker is equipped with a long feed table. The blend is laid on the feed table while the apron remains stationary. Stock is fed to the picker intermittently. Each load of the feed table is a complete blending for all stocks are distributed in the correct proportion. Fully automatic operation is achieved by employing a number of automatic feeds with calibrated scale mechanisms, each laying one kind of stock on the feed table. In this case the picker is fed continuously.

From the picker the blend travels to a ceiling condenser from which it is spread over the long bottom apron of a pit feeder. From here it is fed to a Fearnaught Picker or to a second Proctor Super Picker, which gives the material a secondary blend. The system may be tailored in every respect to the individual needs of the plant.



Proctor Super Picker assures not only an absolutely uniform blend but has an extremely high capacity. Length of feed table may be varied to suit individual plant or production needs.



Automatic weighing type feeds make system entirely automatic. Scale pans are set to control proportionate amount of each lot of stock which goes into the mix. Even distribution of fibers results.

PROCTOR
TEXTILE MACHINERY

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Meetings OF THE MONTH

Fisher Sees Wage Threat to N.E.

National Association of Cotton Mfrs.

Russell T. Fisher, president, National Association of Cotton Manufacturers, pointed out that the competitive relationship between New England cotton and rayon mills and similar plants in other sections faces serious disruption in the post-war period unless immediate steps are taken to level off labor costs.

Speaking at the annual meeting of the association in Boston, Oct. 5, Mr. Fisher described the demand of the Textile Workers Union for an increase in minimum wage to 60¢ an hour, with an increase of at least 10¢ an hour to other employees, which was then before NWLB for decision, as a serious threat to the New England section of the industry. He explained that since New England mills are for the most part unionized, any wage decision would affect nearly every mill in that section, whereas competing mills in other sections are unionized only to a slight extent and only a small portion of these would be affected.

"As soon as the war is over," he said, "labor must decide whether it is better to have high rates and no jobs, or competing rates and the employment that would accompany a leveling off of labor costs in the industry."

Other factors cited by Mr. Fisher as likely to affect the post-war future of New England mills are the inability of mills under the renegotiation law to retain adequate reserves for the replacement of machinery, and the threat of ruinous competition with British cottons. He commented on the far-reaching economic implications of the decision of CCC to purchase the 1944 cotton crop at parity.

Rear Admiral Wm. B. Young, chief of the Bureau of Supplies & Accounts and Paymaster General, speaking at the NACM luncheon, congratulated the industry on its magnificent performance in the war effort. "Cotton and textiles," he said, "play as vital a part in the operations of the Navy as the steel that goes into armorplate and the big guns of the fleet."

The Navy, said Admiral Young, needs more textiles next year than last and he named the following figures: Dungarees, last year, 3,700,000 prs.; next year, 17,500,000. Cotton undershirts, last year, 10,000,000; next, 31,000,000. Chambray shirts, last year, 4,000,000; next, 20,000,000. Black cotton socks, last year 10,000,000 prs.; next, 31,000,000.

Russell T. Fisher was reelected president of NACM. Albert H. Crossman, of Utica & Mohawk Cotton Co., and Rudolph C. Dick of Naumkeag Steam Cotton Co., were elected vice presidents.

Spinners Warned Against Optimism

Southern Combed Yarn Spinners Assn.

Bruce McCullough, of Cotton Yarn Branch, WPB, stressed the necessity of continued high production at the annual meeting of the Southern Combed Yarn Spinners Association in Charlotte, N. C., Sept. 22. "When the European phase of the war has been concluded," he said, "everyone in this industry will be put under a very severe test in the temptation to believe that the whole of the war effort is now over and that we can relax. We must forewarn you that you may be called upon for a surprising volume of materials, which, in the flush of enthusiasm concerning European victory, you might feel is no longer needed."

"So far as we know now," Maj. Gen. E. B. Gregory, the Army Quartermaster General, counseled the combed yarn spinners, "there will be little, if any, interference with any cotton-cloth contracts during the remainder of 1944. . . . However, there is much fighting ahead of our armies yet and ahead of you on the home front. And so long as they must continue to fight, so must we of the Quartermaster Corps and you, as representative of one of the important industries contributing to the supply of the soldier, continue the fight to supply him with the best—enough of everything he needs, and at the time he needs it."

The General mentioned the maintenance of a considerable force in Europe after victory. "Your job," he continued, "of providing clothing and equipment for fighting men is one of the most important home front jobs. It may not be as spectacular as building B-29s or tanks and tank destroyers; you may not feel that running a spinning frame is as much a contribution to the war effort as loading shells or making high explosives, but let me remind you that without the proper clothing and textile equipment our soldiers going into battle with the best guns, tanks, ammunition and airplanes in the world—and they have them—would be a far less efficient crew than the well-organized, finely-trained team of American fighting men who are now hastening the day of victory and peace."

The following are the officers for the ensuing year: president, Wm. J. Pharr, Stowe Mills, Inc., McAdenville, N. C.; first vice-president, R. S. Dickson, American Yarn & Processing Co., Mt. Holly, N. C.; second vice president, C. C. Dawson, Cramerton Mills, Inc.,

Photo by "Charlotte Observer"

Officers of Combed Yarn Group at Charlotte meeting. Left to right, Caldwell Ragan, retiring president; T. L. Wilson, reelected treasurer; W. J. Pharr, president; Mrs. Mildred G. Barnwell, executive secretary; R. S. Dickson, first vice-president.

CASH

MAY SOME DAY BE *your* PROBLEM!

TO ASSURE YOUR BUSINESS ENOUGH FUTURE CASH, EVEN IF YOU DON'T NEED IT NOW, DOES MORE THAN JUST STRENGTHEN YOUR STATEMENT!

You will strengthen your own thinking, your policies, and your will to accomplish what you plan, when your cash position is well entrenched. The many successful firms who are our clients have established the cash reserves which enable them to consider postwar problems with perfect confidence . . . they say that Commercial Factoring is the type of business financing that enabled them to do this. Perhaps we can suggest a way by which you too can reinforce your present strong position and do it economically. May we consult with you?

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THE CFC PLAN IS NOT LIKE ANY OTHER FACTORING SERVICE . . . THE DIFFERENCE IS IMPORTANT

Cramerton, N. C.; treasurer, T. L. Wilson, Ruby Cotton Mills, Inc., Gastonia, N. C.

New Hosiery Equipment Available Postwar

Southern Hosiery Manufacturers Assn.

Development of new and improved equipment such as the 400-needle circular machine, the Komet machine, single-unit full-fashioned machines, back-rack attachments, welt turners, and longer sections; also trends to higher speeds and improvement in operating efficiency have all entered the hosiery industry in the last ten years, according to Taylor R. Durham, executive secretary of the Southern Hosiery Manufacturers' Association, in his annual report at the meeting in Roanoke, Va., Sept. 22 and 23.

Mr. Durham pointed out the problems facing the full-fashioned industry when nylon again becomes available and high-tenacity rayon is offered. Manufacturers will have to make decisions on new equipment. "For example will the products of 400-needle machines supplant full-fashioned hosiery?" he asked. "And when a decision is reached as to equipment, how long will it be before it may be obtained?"

Other speakers included Merryle Stanley Rukeyser, economist of Columbia University, who spoke on the shifts in industrial economy after the war; John Wyckoff Mettler, of Interwoven Stocking Co., who explained the patent situation on elastic-top hosiery; W. M. McLaurine, secretary, ACMA, who spoke on the "Intangibles in Industrial Relations"; Earl Constantine, president, NAHM, who spoke on the broad aspects of the hosiery industry; and Joseph R. Bentert, head of the knitting department of N. C. State Textile School.

Officers elected follow: president, Carl S. Kincaid, Magnet Mills, Inc., Clinton, Tenn.; vice-president and chairman of full-fashioned division, Albert F. Garrou, Pilot Full-Fashioned Mills, Inc., Valdese, N. C. Charles McLellan, of Alden Mills, New Orleans, La., was reelected vice-president and chairman of seamless division. Fritz Seifart, of Hudson Knitting Mills, Charlotte, N. C. was reelected treasurer.

AATCC Research Plans Explained

Southeastern Section, AATCC

The Executive Committee on Research was the guest of honor at the Sept. 9 meeting of the Southeastern Section of AATCC in the Callaway Auditorium, LaGrange, Ga. This committee consists of Leonard S. Little, chairman; J. R. Bonnar, W. D. Appel, P. J. Wood, T. R. Smith, and Dr. L. A. Olney. Each of these members reviewed briefly the work of the various sub-committees to whom special phases of the research program had been assigned. The general committee comprises 60 men.

T. R. Smith outlined the actions of the executive committee in reorganizing the 37 sub-committees into 16 active working groups and reviewed the principal subjects assigned. Among these are; wash-fastness tests for dyes and printed textiles, fastness to light, bibliography, standard methods of chemical analysis and testing as applied to the textile industry, water resistance of fabrics, color, standard methods of determining finishing materials in textiles, chemical technology of wool, crease resistance and permanency of finish on fabrics, resistance to insect pests, transference of color, shrinkage of textile fabrics, mildew proofing, testing fire-resistant material, and detergency.

W. D. Appel, president of the association, spoke on the possibility of conflict between the activities of the research committee and those of the numerous textile research institutions which have recently been organized. They are *not* competitors; AATCC is *not* a research group, but definitely is a professional organization, he stressed. To quote from his remarks: "To the extent that the other organizations undertake research in our field, it is clearly our object to encourage them and to give them the benefit of our knowledge and long experience. The opportunities for research on textiles are almost limitless, and the more that is accomplished by research, the more knowledge that is gained, the better fortified our chemists and colorists will be to serve their employers and the industry." He concluded, "AATCC has always avoided duplication by maintaining close contact with other organizations whose interests are related."

Industrial Relations Now and Postwar

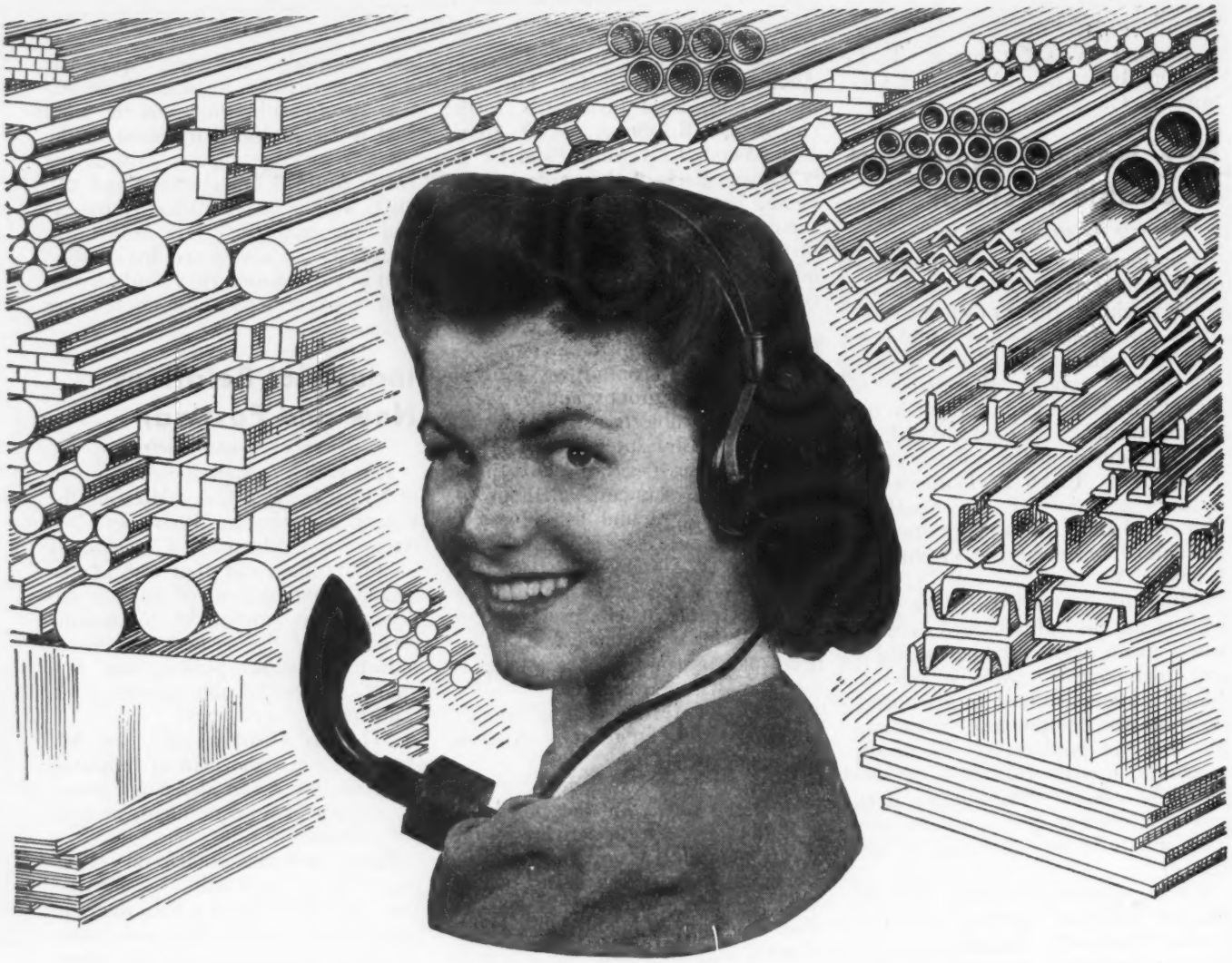
Southeastern Personnel Conference

Lawrence W. Appley, vice-president of Vick Chemical Co., addressing the Fourth Southeastern Personnel Conference at Durham, N. C., Sept. 11 to 13, pointed out that one of the greatest contributions of this war has been the recognition by top-ranking executives of the necessity for sound industrial-relations policies and programs, and for capable personnel administrators.

"The day is not far off," said Mr. Appley, "when the field of industrial relations will be considered as a source for the selection of presidents of large corporations."

Panels were conducted on "Contract Clauses in Union Agreements" and "Development of a Personnel Organization." In the discussions interest was shown in grievance procedures, service and efficiency ratings, accident prevention, seniority and returning service men. Demonstration of Job Relations Training of WMC was conducted by R. T. Taylor, of Burlington Mills.

AATCC's Executive Committee on Research: left to right, standing J. R. Bonnar, P. J. Wood, W. D. Appel, T. R. Smith; seated Dr. L. A. Olney, L. S. Little.



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QUICK, DEPENDABLE SHIPMENT

Development in Bobbin Construction

A new construction for bobbins with heads made from any material—wood, fiber, aluminum, bakelite, stainless steel, or magnesium—where the bobbin has a wooden or a plastic barrel, has been announced by Lestershire Spool & Mfg. Co., Johnson City, N. Y.

This new construction is the result of a wartime development to make a bobbin which had to withstand the enormous pressure developed in winding nylon, or high tenacity rayon, or even cotton tire cord, onto particularly large bobbins. For instance, one pound of some types of nylon might exert a total crushing pressure on bobbins up to 4,000 lb., which is sufficient to force the heads off any ordinary construction of spools.

After a great deal of research work to learn why ordinary screws do not hold in the end-grain of hardwood, Lestershire found the answer and did design and applied for a patent on a special screw which will hold in end-grain of hard maple stronger than the screw itself. In other words, the screw shank, or head, would break off before the screw itself would loosen in the wood.

Four different sizes of these screws are illustrated. On the heavier type a thicken up head is used in order to keep the head from collapsing under pressure. The latest type is also shown, using the Phillips type head, which gives a much stronger screw without having to thicken the head up so much. The ordinary screw-head would break off under the pressure some of the yarns develop. With the four sizes on hand, any type of bobbin can be made. Given a number of pounds required to be resisted, whatever type screw is necessary can be used to give all the strength needed with that particular pressure, with a good safety factor beyond. For instance, the smallest screw shown will hold upwards of 1,000 lb. and the largest screw will hold upwards of 2,000 lb. If a bobbin with a 4,000 lb. total resistance is wanted, four of the smallest screws are used on each end. Four of the largest screws on each end would be sufficient to hold 8,000 lb. without giving way. By varying the size, or the number of the screws, bobbins of almost any strength desired may be built.

Another feature of this screw is that once set it will not loosen in the slightest, no matter what the vibration, or whether the wood is alternately steamed and dried, the holding power seems to remain the same. The spool illustrated was constructed with the fiber heads being held to the wooden barrel by $\frac{1}{8}$-in. thick steel plates and five of the largest screws. Pressure was applied between the heads in a test, and when 6,000 lb. was reached the heads began to loosen because the screw-heads were being forced straight through the $\frac{1}{8}$-in. steel washer. In fact, two of them on one end are all the way through the steel. In other words, on this particular spool, the construction was stronger than the material from which the heads were made. Not a screw loosened, but the screw-head pulled through the steel washer, shearing the steel.

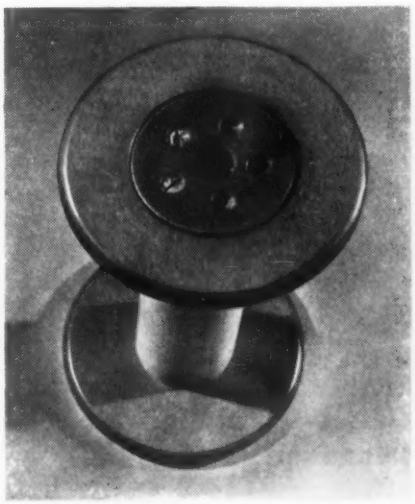
These screws should make an exceptionally good method for fastening bakelite, aluminum, or stainless steel heads to wooden barrels for steaming bobbins. The usual method has been to use rivets. Rivets expand or contract lengthwise with the heat, and sometimes loosening the heads. These special screws would "come" and "go" with the head itself since they are fastened to the end of the wooden barrel only. Therefore, they would be much less likely to permit the heads to loosen.

The Lestershire Anchor Screw will hold lengthwise of the grain stronger than the standard wood screw holds crosswise of the grain. The standard screw normally holds crosswise of the grain between three or four times as strong as endwise.

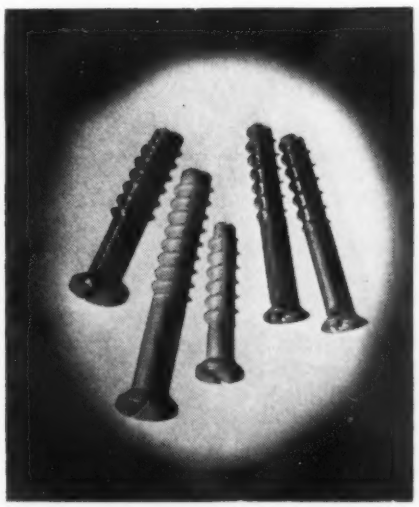
Self-Sealed Ball Bearing

A new type of self-sealed ball bearing, more nearly friction-free, with provisions for revitalizing the lubricant to extend bearing useful life under adverse conditions, has been announced by New Departure, Div. General Motors Corp., Bristol, Conn.

Heretofore, in special cases, adverse conditions such as high surrounding

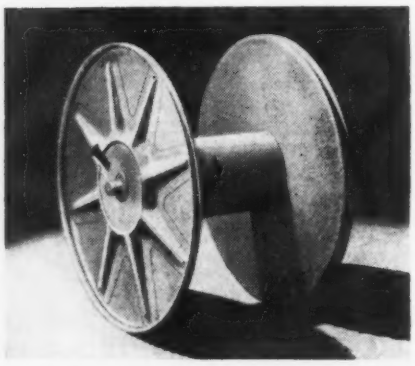


This bobbin assembled with the new type of screws withstood 6,000 lb. of pressure between heads. Note how two of the screws have sheared the steel plate (Lestershire)



Lestershire Anchor Screws developed to withstand pressures ranging from 1,000 lb. to 2,000 lb. in wood lengthwise of the grain. Such screws were used for bobbin shown at left.

NARROW FABRIC BEAM



An all-steel, reinforced, and electro-welded narrow-fabric beam for use by ribbon and narrow-fabric manufacturers, is being offered by Hubbard Spool Co., Carroll Ave., Chicago 12.

temperatures, have shortened lubricant life.

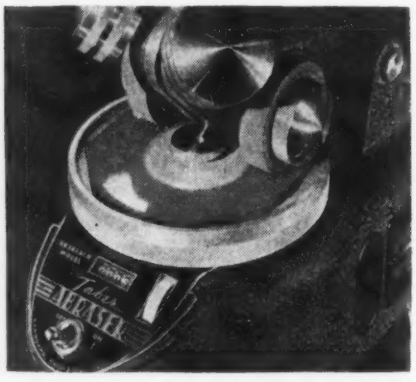
Four small holes in the outer metal of the New Departure seal permit the insertion of a "hypodermic" nozzle on a pressure oiler to pierce the felt and inject a "shot" of oil or low shear grease into the bearing, as illustrated. Thus the old or hardened grease can be quickly revitalized and can double or triple the length of service formerly obtained under these special adverse conditions. At the same time a redesign of the famous ND-Seal not only permits this new injection system, but also makes the seal more nearly friction-free and more efficient under all conditions.

"Hypodermic" nozzle on pressure oiler is inserted through small hole in outer metal of New Departure seal and pierces the felt. As nozzle is withdrawn, the resilient hard-woven felt closes up, leaving no hole for dirt or oil to pass (New Departure)

Abrasion Tester

An improved research-model tester has been developed by Taber Instrument Corp., North Tonawanda, N. Y., for wet-testing of fabrics. The specimen table holds a sufficient amount of water to cover the specimen.

The wearing action is performed by dual Calibrase wheels bearing against the specimen under constant pressure, revolving in opposite directions, one sliding radially toward the outside, the other sliding toward the inside of the wear path. Each wheel revolving at a steady, constant speed through contact with the specimen exerts a combined abrasive, compressive, and twisting action twice in each revolution of the specimen holder. Because the specimen holder travels a complete 360° circle, the wear due to difference of weave is fully revealed. A standardized load adjustment is provided for varying the pressure of the Calibrase wheels against the specimen so the abraser will test all types of fabrics.



Improved abrasion tester permits testing of fabrics while wet (Taber)

The results of tests are reported either numerically as the number of "wear cycles" to produce a given amount of wear, or as "loss in weight" when weighed on a precision laboratory balance.

New Infra-Red Lamp

A new 375-watt, reflector-type, infra-red heat lamp, has been announced by the Wabash Appliance Corp., 335 Carroll St., Brooklyn, N. Y. The new lamp is made in clear and in ruby glass. This higher-wattage Birdseye RE-40 lamp is designed to produce higher drying temperatures not possible with available 250 watt sizes. A heat-proof Superlok base, a ceramic heat reflector disc, a tungsten M-filament, and a built-in reflector are standard features of the new infra-red lamp.

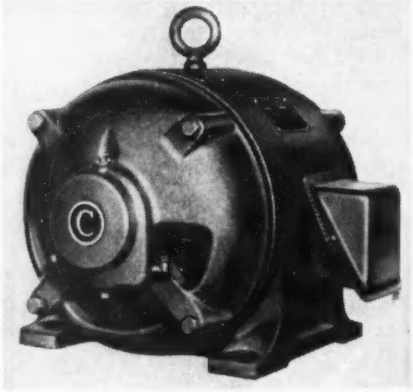
Improved Sheave

A new sheave, designed for quick and easy mounting and demounting, has been announced by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. Known as the "Magic-Grip" sheave, it is locked to the shaft in one tightening operation. A tapered split bushing, which accommodates normal shaft tolerances, is drawn further into the sheave as it is tightened on the motor shaft, hence the sheave, bushing and shaft are locked together simultaneously. This positive clamp fit assures perfect centered and smooth running performance free from backlash and shear. It is stated that the new design permits a sheave to be mounted closer to the motor—increasing bearing life by reducing shaft overhang.

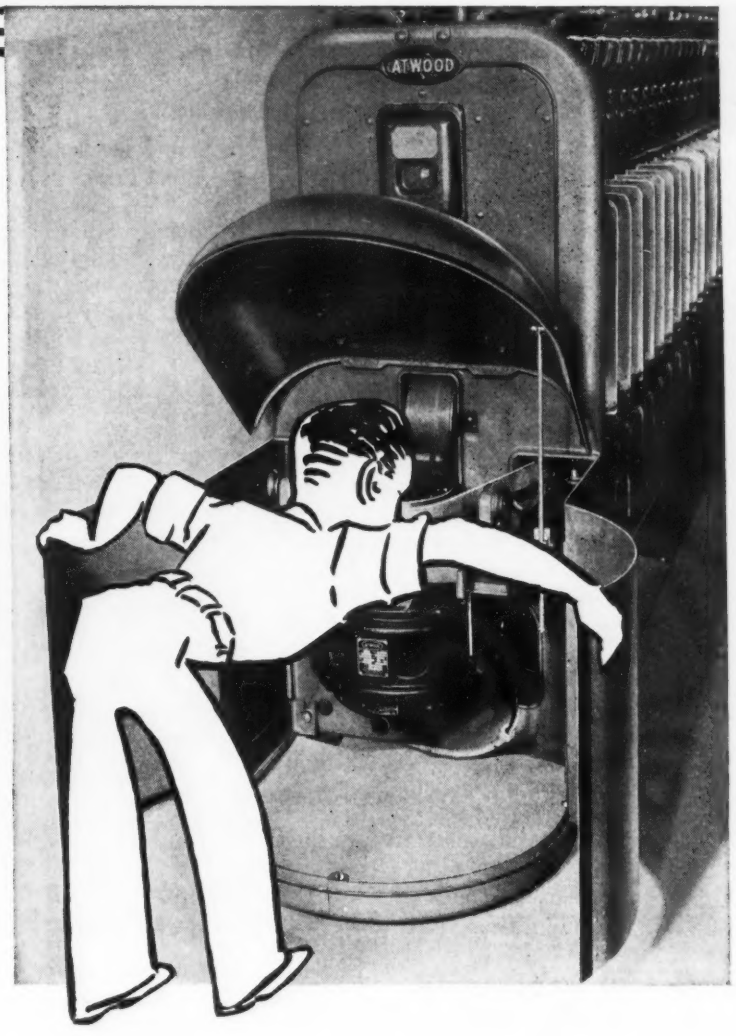
New sheave permits rapid mounting and demounting on motor shaft (Allis-Chalmers)

General Purpose Protected Motor

Announcement of a general purpose, open rated motor in a protected design and in sizes from 1½ to 15 hp., has been made by Century Electric Co., 1806 Pine St., St. Louis 3. The upper half of the end bracket is closed to minimize the possibility of dripping liquids or falling solids entering the vital parts of the motor. Two powerful fans located behind the bearing brackets draw cooling air through the bearing bracket openings, around the bearings, across the windings and to the air



A protected motor for general purpose use (Century)



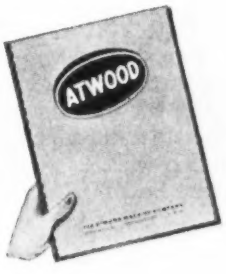
Now's a good time to take a look under the hood!

Don't wait until the last minute and then rush in and buy any machinery you can get. Now is the time to line up your requirements and find out what machines will meet them most efficiently and economically.

Producers of textile yarns of all sorts — cotton, worsted, rayon, spun rayon, silk, nylon, or combinations — are right now visiting the Atwood shops and laboratory, discussing their product and production problems with Atwood engineers, finding out what's new and how the latest Atwood developments can be applied to their postwar needs.

Getting fully posted on the new Atwood machines involves no obligation on your part and may save you a great deal of time and money later on. Don't put it off. Now is the time to get in touch with us.

The new ATWOOD Catalog contains information and reference data of real value to every yarn producer. A letter on your company stationery will bring you a copy by return mail.



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passages between the outer surfaces of the magnetic core and the frame—the heated air being expelled through openings at the side and bottom of the frame.

Portable Infra-Red Lamp

Quick heating of small surfaces is possible with a hand-model Near Infra-red unit, manufactured by the Fostoria Pressed Steel Corp., Fostoria, Ohio. This unit, consisting of a lamp, reflector, cord and plug, and off-on switch is intended to assist master mechanics, fixers, and maintenance crew members where it is necessary to heat small areas to high temperatures in a short period of time. It is stated that 20 gage black metal, 1¼ in. in dia., can be heated to 1,000° F. in 1½ min. when the edge of the reflector is 2½ in. from the metal. The heating unit may be used in certain soldering operations, preheating small metal parts to secure shrink-fit, for touch-up paint finishing, for melting greases, oils, etc. A 375 watt, 110 volt carbon filament infra-red lamp is furnished with the unit.

Useful Accessories for Textile Mills

A special mimeograph stencil sheet for use by both prime and subcontractors to produce 20 or more copies of War Department inventory schedules required for contract termination may be obtained from A. B. Dick Co., 720 W. Jackson Blvd., Chicago 6.

Laminated wheels for factory truck equipment made of Formica laminated plastics for use where it is desired to eliminate static or friction generated by metallic wheels, are being offered by Devine Bros., Utica, N. Y.

A starter for fluorescent lamps having much greater life expectancy than the average starter, is announced by Sylvania Electric Products, Inc., 500 Fifth Ave., New York. This starter, known as the COP, prevents flickering or blinking by cutting a deactivated lamp out of the circuit almost immediately. It prevents waste of current and protects ballasts from overheating. The starter is made for 40-watt fluorescent lamps.

Centrifugal pumps resistant to corrosion have been designed by National Carbon Co., Inc., Cleveland, Ohio. The pumps are resistant to practically all corrosive fluids, including acid mixtures, and are not sensitive to sudden variations of fluid temperature. These pumps are available in three sizes, the largest of which operates against a 100-ft. head.

Liquid levels in 30-gal. and in 55-gal. steel drums may be registered using a U-C indicator, developed by Techtmann Industries, Inc., 828 No. Broadway, Milwaukee, Wis. This indicator replaces the faucet on steel drums. The ordinary drum-faucet is merely screwed into the indicator. When the drum is empty, the entire assembly may be removed and attached to a full drum.

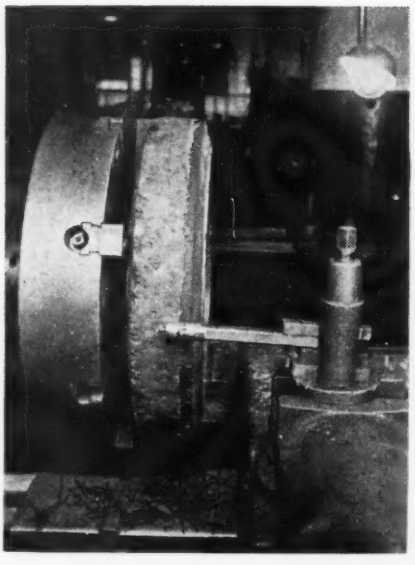
A germicidal fixture for disinfecting the air is being produced by Edwin F. Guth Co., St. Louis 3, Mo. This electric lamp consists of the G. E. Uviarc lamp and a special reflector-unit which irradiates ultra-violet rays. The rays of this lamp destroy bacteria and viruses that float on the air currents.

Mill Maintenance TO KEEP 'EM RUNNING

Conservation of Power Truck Tires

Solid rubber tires on drive and trail wheels are practically the only parts of the power industrial truck that are vulnerable to wear, according to C. B. Cook, vice-president, The Elwell-Parker Electric Co., and when rubber is plentiful the cost of keeping spare tires on hand for replacement is unimportant. Tire life varies from three months to five years, depending on floor conditions and on the care given to the tires. However, conservation must pinch-hit for replacement during the emergency period.

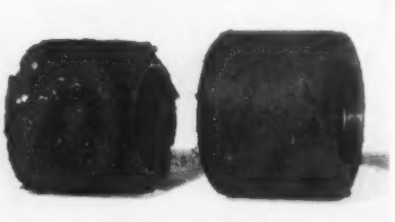
Vibration due to lumpy tires cuts down the operating efficiency of the material handling system, sometimes by inducing operator fatigue and sometimes by causing damage to the loads, such as finishing precision parts. Also, tires which are out of round will wear out very much faster; and travel vibration does the truck itself no good. These are all good reasons for keeping a watchful eye on contours as well as on thickness, particularly in plants where floor conditions tend to accelerate the rate of wear.



Large wheel is mounted in lathe for turning.

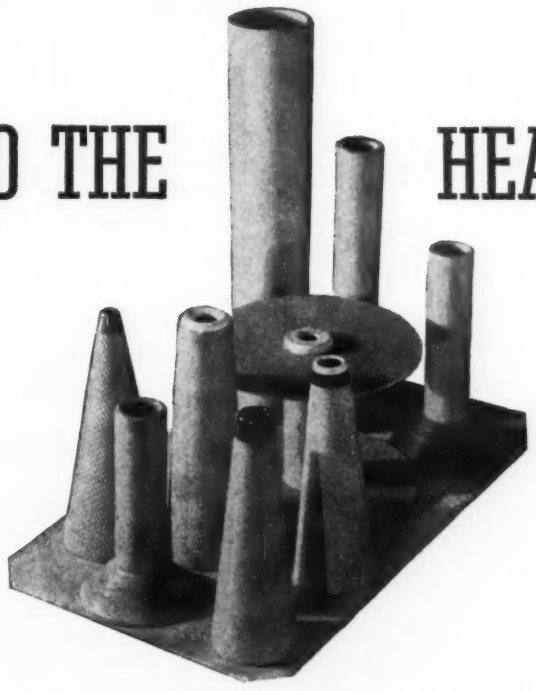
One very satisfactory method which has been developed for reconditioning a lumpy tire is to remove the high spots by turning in a lathe, making the circumference true with the center of the wheel. This reconditioning can be done by chucking the entire wheel with the tire, or by passing off the tire and replacing it with a spare (if spares are available) while the reconditioning is being done. The average time required to remove a wheel, press off the tire, press on a spare tire, wash out the bearings, repack with grease and replace the wheel, is two hours.

Imbedded chips should be removed by hand, provided this can be done without leaving a large hole. Spiral metal turnings, for example, are likely



Left—Small tire before grinding. Right—Small tire after grinding.

WE FOREGO THE HEADLINES —



TEXTILE PAPER CARRIERS

The only reason textile paper carriers have not made the headlines is because, in spite of unprecedented war demands, SONOCO has quietly met every supply crisis with enough on time... for both war and civilian needs.

Textile paper carriers will continue in critical need for as long as the textile industry continues vital to the war effort—and the post-war era that will follow.

In the meantime we are glad to forego the headlines for our own satisfaction in a job well done.

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sonoco SERVES THE WORLD PAPER CARRIERS

DON'T WASTE PAPER SAVE WASTE PAPER

to tear out too much rubber, or cut a "biscuit". Experience has indicated that the turning tool will usually flip out such chips with least damage.

The cutting tool should be ground with a considerable rake, or clearance, and should present a fairly sharp edge as compared to a tool used for turning steel. It should be clamped rigidly into the tool post. The sharp edge is fed into the tire at an upward angle. Make a cut ⅛-in. deep, or less, using a slow feed with the lathe chuck turning between 300 and 500 r.p.m. Due to the wide range of rubber compounds encountered, and to variations in the conditions of the tires, the tool angle, clearance, feed, and speed are best determined by experience.

Reconditioning has been estimated to add 70 to 80% to the life of the tire. Care is always taken to replace tires in pairs having the same outside diameter, so as to keep the truck in a level position. Especially is this advantageous on the drive axle, reducing wear on the differential.

Wheels of smaller diameter, such as are used beneath the platforms of lift trucks, are usually not so easy to recondition by turning because of the lower peripheral speed. In this case a hub may be turned and chucked or centered in a grinder, and the rubber ground off, using a very fine 6-in. dia. wheel turning at high speed. Plenty of water must be used to wash the rubber out of the pores of the grinding wheel. As in the case of turning it is better to remove imbedded chips before grinding small tires.

Anti-Freeze Mixtures for Fire Extinguishers

Fire extinguishers located in unheated buildings should be checked, especially during winter to prevent freezing.

According to a leaflet issued by Pyrene Mfg. Co., hand pump, water type extinguishers require a minimum of attention but should be checked at least once a year to assure that extinguishers are full and that antifreeze solution has not been disturbed. On the 5-gal. size the filler cap should be lifted and the contents examined. Test the pump by directing the liquid stream into the tank. The pump action should be free and positive. There should be no leakage at the packing gland nut. If necessary, adjust this by turning nut.

Where such types of extinguishers are exposed to freezing conditions, the strength of the solution should be sufficient to meet the lowest temperature encountered. If there is a question as to the strength of the solution in the tank a hydrometer reading should be made. Accurate freezeproof charges should be used in accordance with the table.

Table of Anti-Freeze Solution Strengths

	Hydrometer Readings (Baume)
For 2½ Gal. Pump Type Extinguishers	
For 10°F. above zero—5 lb.	16
40°F. below zero—10 lb.	30
For 5 Gal. Pump Type Extinguishers	
For 10°F. above zero—10 lb.	16
40°F. below zero—20 lb.	30

PRODUCTS & PROCESSES

Possible Size Ingredient

GLYCERYL MONOSTEARATE; Beacon Co.; Boston, Mass.

The production of Bemul, a white edible glyceryl monostearate, in bead form, dispersible in hot water and soluble in alcohols and hydrocarbons has been announced by the above company. While primarily of special interest to manufacturers of cosmetics, pharmaceuticals, and food stuffs, it is also of interest as a possible constituent of rayon sizing mixes. Being water soluble, it may suggest itself as a lubricant in warp sizing, and being an emulsifying agent may possess desirable properties in textile finishing.

Bicarbonate Used As Neutralizing Agent

Bicarbonate of soda is recommended by Mathieson Alkali Works, Inc., for neutralizing caustic soda in various finishing plant operations. In this process, the caustic soda and bicarbonate react to form sodium carbonate, which is more easily washed out of goods than is the original caustic soda.

It is claimed the new process eliminates the use of the mineral acids now commonly employed; and, therefore, makes unnecessary the use of acid-resistant equipment. It also minimizes hazards to workers. It is said the process has already been employed successfully in the removal of caustic after continuous-jig scouring, mercerizing of open-width fabrics, after warp-yarn mercerizing, after kier boiling, and after caustic steaming.

Emulsifying Agent

2 - AMINO - METHYL - 1 - PROPANOL, Commercial Solvents Corp., 1600 Arch St., Philadelphia 3, Pa.

This aminohydroxy compound is one of several derivatives of the nitroparaffins, which are recommended as emulsifying agents. These derivatives may be used in making oil and water emulsions of practically any type of fats, oils, waxes and resins. Further information regarding the compound mentioned, as well as the other members of the series may be obtained from the above company.

Three Latex Types

SYNTHETIC LATEX; Goodyear Tire and Rubber Co.; Akron, Ohio.

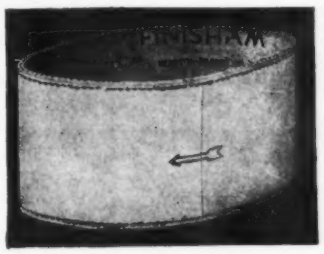
Goodyear has announced production of a commercial latex which is manufactured in three types, all of which are of the GR-S type and are copolymers of butadiene and styrene.

Type 1 contains 28% solids, as well as a small percentage of anti-oxidant.

Type 2 has the same solids contents without the anti-oxidant.

Type 3 contains 39% solids. It is claimed that type 3, particularly, may serve as a suitable replacement for natural rubber latex for treating cotton and rayon tire cord, as well as various applications on paper, cloth, and other fibers.

now you can get FRENCH-DRAWING RUB APRONS THAT GIVE ACCURATE yarn count



FINISHAM

- - - an "all American" product

Until 1939 rub aprons (sometimes called rubbing leathers) used on French-drawing or porcupine frames in the United States, were tanned and manufactured on the continent. World War II shut off these sources of supply and inquiries began to be made among domestic tanners for an alternate to this highly specialized type of product.

We answered the challenge by developing our FINISHAM apron. It is not a copy of something else, but in a class by itself. Within one month's time of the introduction of Finisham to the market, this apron won recognition. It is considered superior to any other type of apron used on a French drawing frame, because:

—**FINISHAM produces highest-quality yarn.**
—**FINISHAM runs straight on rolls.**
—**FINISHAM maintains constant rub surface.**
—**FINISHAM does not stretch.**

We have the honor of being the only tanning and manufacturing concern in the United States to develop a satisfactory leather for use on French Drawing frames. It took many years of research to produce FINISHAM, and requires constant, controlled, tanning supervision to maintain the high quality it enjoys.

Our latest catalog sent upon request.

FINE FINISHING WITH FINISHAM

BARNES PRODUCTS

Aprons for Combing, Preparing, Finishing, and Drawing
FRENCH AND BRADFORD SYSTEMS
Chrome—Brown—Special Tan

Plain and Hair-On Loom Strapping

BELTING
First-Quality Center Stock Prestretched and Manufactured for Each Drive Condition Available in All Tannages

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE Textile Leather HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **THIS MONTH'S PRIZE WINNER**

Device Prevents Filling From Cutting Out Selvage

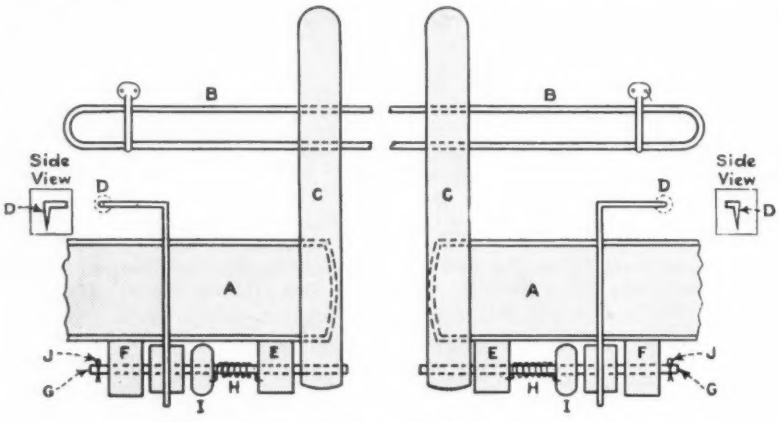
Often cloth constructions requiring relatively heavy filling (or yarns such as Fiberglas) will continually break out selvage ends and require unduly heavy selvages that may not be acceptable in the cloth.

Very many devices have been tried to prevent the filling from cutting out the selvages but none we know of works as well as the one illustrated. It catches the filling on each pick in such a way that there is no pull whatever on the warp edge.

The whole device is mounted on the temple cap (see *A* in the illustration) and is operated by the shuttle guard *B* through the metal bars *C*.

When the lay and shuttle guard is back, the wire needle-point *D* is down so as to catch the filling thread. The movement of the lay lifts up the point in time to release the filling when the shuttle is in the box on the opposite side.

Two pieces of metal *E* and *F* are fastened to the temple caps to act as bearings for the shafts *G* on which the wire needles *D* and the metal bars *C* are welded. Torsion is applied by means of spiral springs *H* which are adjustable through the collars *I*. Cotter keys *J* hold the shafts in place. Dimensions of the parts will vary according to the type of loom and its settings. *(K-284)* Clifford Springman, Montoursville, Pa.



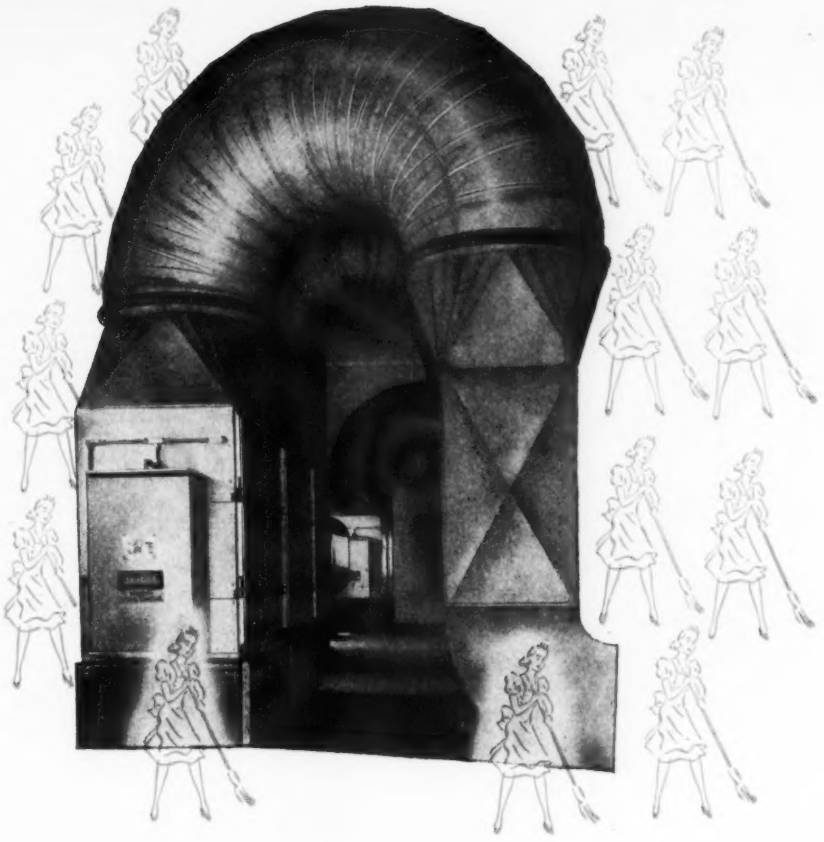
Filling holding devices are mounted on temple caps.

Guides Designed for Cord-Testing Jaws

When testing tire cords, it is desirable to avoid handling the part of the specimen which is to be stressed. This is true for tests on conditioned cords, and particularly true for tests on oven-dry cords. The U. S. Rubber cam-type cord jaws currently specified by the A.S.T.M. have a rather narrow throat, and in order to place the cord specimen in the proper position, it is customary for the machine operators to guide the cord around the snubbing surface and into the clamp, using for the purpose a finger, a pencil, or some similar object. The use of the finger is objectionable, and when any other object is used, time is lost and the test delayed by the extra operation.

In order to facilitate the loading of cords and to expedite the tests, the

(Continued on page 142)



ELECTRONICS

Keeps Dixie Durene Clean

The application of "electronics" is not new at Dixie. For years a modern feature of "Controlled Manufacture" has been the use of a battery of Electrostatic Precipitron units to clean the air where clean air counts most.

Dust particles are electrically charged and then attracted to "collector" plates, thereby eliminating dust and dirt. This means better manufacturing results for you, a more dependable product for your customers.

In post-war years *Dixie Durene* will be again plentiful for civilian uses. Plan now to use it in the quality merchandise *you* will manufacture for your trade.

Made of Durene® multi-ply mercerized cotton
4 WAYS BETTER than ordinary cottons
EXTRA COMFORT ---more absorbent
EXTRA STRENGTH ---longer wear
EXTRA QUALITY ---lasting lustre
EXTRA SERVICE ---easy to wash

10% OF DIXIE'S PAYROLL IS INVESTED IN WAR BONDS

Dixie MERCERIZING COMPANY

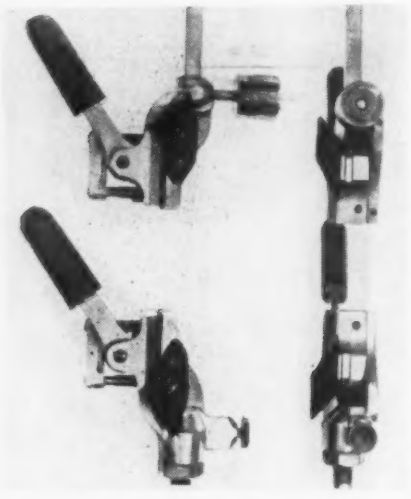
CHATTANOOGA 1, TENNESSEE

AMERICAN COTTON MADE IN U.S.A.

Dixie Durene
A PRODUCT OF CONTROLLED MANUFACTURE

KINKS & SHORT-CUTS

(Continued from page 140)



Jaw guides for cord-testing machine.

Dupont Rayon Analytical Research Laboratory has used small guides permanently attached to the side of the jaw-snubbing block. These are constructed of plastic and resemble in shape the tip of a horn. The surface of contact between the jaw block and the guide is recessed slightly into the guide so that the actual guiding surface projects over the jaw block toward the center of the normal cord path. The guide surface is polished to prevent damage to the specimens.

The accompanying photograph illustrates a guide attached to a U. S. Rubber-type cord jaw. The general form and dimensions can be estimated, as minor variations in size and shape are unimportant in the device, and may be necessary to vary them if the device is fitted to different jaws.

The use of this device is recommended when testing any samples which have a tendency to kink, and for all samples requiring snubbing-type jaws. The guides are not available commercially. They can, however, be fabricated easily. *(K-246)* D. E. Howe, E. I. duPont de Nemours & Co., Richmond, Va.

Soft Rope of Yarn Helps Warps to Weave

The chafing of yarn in passing through heddles tends to wear and weaken the yarn and to break it, while the reed in beating up the filling chafes the yarn even more. The reed will often scrape the loose fibers from each thread and collect them in buttons (fluff balls) just behind the reed and in front of the harnesses. When these buttons grow large they will not be able to pass through the reed and so will be broken out. This may be prevented by properly sizing the warp. But if a soft warp is already in the loom, it can be helped by making a loose rope of waste yarn and attaching it to the lay just behind the reed so that it will rest lightly on the warp. Then as the lay moves forward, the projecting fibers on the yarn will be smoothed down and the yarn will pass through the reed. In case the difficulty is very great, this rope of waste may be moistened either with water or a thin size.

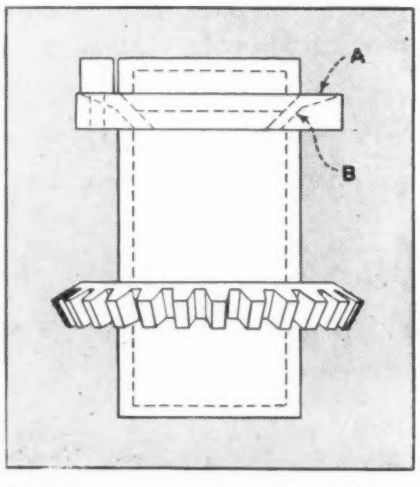
The rope of waste yarn could be attached any place on the lay back of the reed that will let the rope ride forward and backward on the warp. The rope is pleated from three pieces of waste yarn a little longer than the width of the warp, so that it will ride easily on the warp. *(K-206)*

Oil Groove and Holes Improve Gear Service

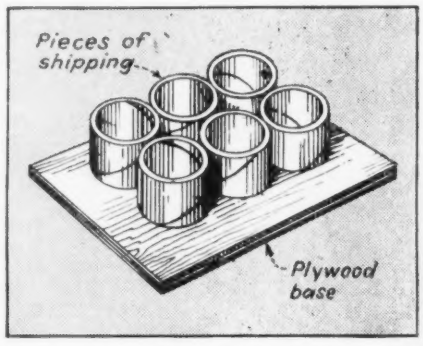
Shown here is a sketch of an improved bobbin gear for fly frames and fly twisters. The first one I made a few years ago is still giving fine service.

The gear is placed in a lathe and the flange turned down (on the top side) to form a recess as shown at A. Next a small hole is drilled through the side of the gear as at *B*. There should be two holes on opposite sides.

The object in turning the face of the flange down and drilling holes through the sides is to facilitate oiling the gear. All the oil that bobbin gears normally get is what runs down between the gear and the bolster, which is very little. Usually the oil will run down the bolster to the flange of the gear and will remain there until thrown off by centrifugal force when the frame is started. In mills making high-grade yarns, rayons, etc., oil on the yarn is a very serious problem. A gear such as I have designed here will eliminate this problem and reduce tangled bobbins of yarn because the gear is properly lubricated and its tendency to jump is reduced. Properly set, it will last three times as long as a gear that does not get proper lubrication. *(K-225)*



Lubrication arrangement reduces bad work from fly frames.



Pieces of tubes fastened to base make small-parts container.

Small-Parts Holder From Shipping Tubes

A very small percentage of fixers and mechanics keep their small parts in order. The mechanics who do not, often have them all mixed up in what might be called a junk box. Every time such a fixer needs a part he will have to dump out all that the box contains before he can locate the part needed. But by making the convenient container shown, parts can easily be located.

The cloth shipping department can furnish discarded tubing and a piece of plywood from an old shipping case. Cut as many pieces of tubing as needed and use a good grade of glue to glue them on to plywood. It is also advisable to glue the sides of the tubing. When dry, apply one or two coats of heavy shellac. These containers are very convenient for cotter keys, washers, screws, nuts, etc. *(K-243)*

Fabric Improved by Worsted Finishing Kink

This kink deals with the finishing of worsted goods that contain sizing in the warp or filling, especially those that have 100% cotton warp.

To soften this cotton, scour it before fulling by using an enzyme. This desizes the cotton and the pieces then

(Continued on page 144)

It's what you *make* of a name that counts!

When he opened a lunch wagon, "Hinky" quickly realized the money value of his name. Everything was marked — linens, aprons, chefs' hats, silverware, dishware, match boxes. "Hinky," now a prosperous restaurateur, got the name that has helped him to fame and fortune when he greeted the gang with his theme song, "Hinky, dinky, parley-voo."

Your business, too, is built on a name. Capitalize on your name by adequate Identification of your merchandise. For consumer acceptance, for building trade outlets, for your protection, use Kaumagraph Identification Products. Kaumagraph Dry Transfers, Prestomarks, Embossed Seals, Lithography, Box Wraps and Labels will carry your name with distinction, will help build business. Kaumagraph Products are used on every type of textile product.

It won't be long now before Kaumagraph's facilities can once again be turned from war production to full time service for civilian requirements. Now is the time to send for a KAUMAGRAPH IDENTIFICATION MAN.

Identification Headquarters since 1902

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EMBOSSED SEALS

Embossed seals, as designed and produced by Kaumagraph craftsmanship, will enhance the quality appeal and salability of any good product.

Kaumagraph Company
Wilmington 99, Delaware

Empire State Building
New York 1, N. Y.

Representatives in Principal Textile Centers of the World

KINKS & SHORT-CUTS

(*Continued from page 142*)

full without wrinkles. They will then have a much better feel and texture.

Such fabrics also dye up much better, and you can eliminate hot and cold rolling before napping.

The same kinds of cloth with 100% cotton warp can be treated or scoured after the pieces are fulled, in place of scouring before fulling. These pieces also dye and nap much better than pieces not treated, and they finish without a trace of creases or wrinkles. *(K-234)*

Scraper From File Is Useful to Fixer

A discarded file when cut down on the emery wheel and dressed smooth makes an excellent scraper.

As shown in the sketch, this particular file was formerly half-round—but flat, round, or square files can be utilized for the same purpose.

This scraper is an excellent tool for working off the rougher part of "washboard" ridges on shuttle backs and for cutting down the "rocker" bottom previous to truing up with a straight edge. It can also be utilized for scraping off hard particles of glue on raceplates, and for many other purposes.

After forming the tool, the ends can be covered with tape. *(K-189)*

Old file makes good scraper.

Twisting Pattern Chain Saves Time in Building

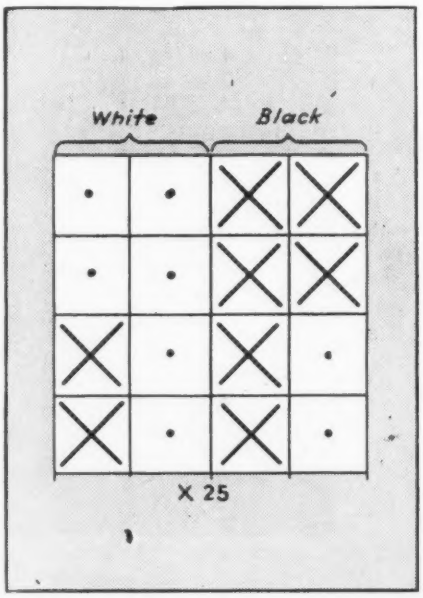
This chain-building kink has been very successful in saving labor and chain stock. It is useful on 4x1 automatic looms with a pattern such as this:

100 picks of white
100 picks of black

200 picks total

Instead of using 200 bars, use only 100 and build it on both sides such as in the chain pattern shown.

In making up the chain, start the first bar of the box chain on the first bar of the harness chain, using white. Next roll the chain onto the chain cylinder and put a half turn into it when hooking together. Then, bring both first bars under vibrators and start the loom. The first revolution of box chain will run white in 1 and 2 boxes. Then it will turn and use 4 and 3 boxes on black. This kink is more practical on chains of 80 bars or more, due to the twist necessary. On shorter patterns it is likely to bend the links. *(K-207)*



Chain for 4x1 automatic loom weaving 2 colors of filling.

Good Washers Made From Old Oil-Soaked Leather

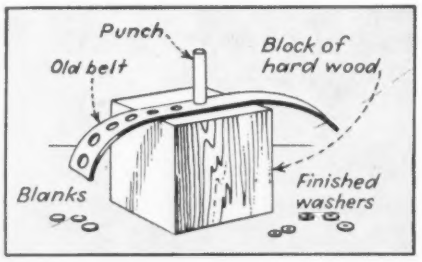
Leather washers cut from discarded belting makes a very good fill-in for padding backs of picker blocks or for filling the front between the blocks and bumper straps. Washers from old leather belting that is impregnated with oil will usually outwear ordinary leather washers.

A 12-in. length of 1½-in. water pipe can be used as the cutting tool. Grind the one end down to a taper for the cutting edge. It is not necessary to have a sharp edge, as an edge $\frac{1}{32}$-in. wide is sufficient.

Procure a hardwood block 8 x 8 x 16 in., or near that size, and stand the block on end so the grain is up and down. Run the belting across the top and using a heavy hammer that will cover the top of pipe, cut about a dozen washers from the belting. Use a rod to punch these washers from the pipe.

After sufficient washers have been cut out, use a half-inch leather punch to cut out the center hole.

If shellac is plentiful, washers can be soaked in it for several days so that they will give longer wear. *(K-236)*



Discarded material can be used to produce good leather washers.

Reach Out-of-Way Places When Blowing-Down Lint

Conveniently located air outlets facilitate the "blowing-down" operation that is so necessary in many textile operations. Regular blow-down not only helps to keep the plant clean and prevent dusty lint from coming down on clean cloths, but equally important, it removes a fire hazard.

Often overhead areas, which contain relatively large amounts of lint, are omitted from blow-down because they are so hard to reach. The pole holder shown in the illustration was designed to reach such overhead areas or other places difficult or dangerous to reach by hand. Note the dust mask and goggles—both of which should be used when blowing down. *(K-240)* Compressed Air Institute.

Pole used to extend reach of air hose.

Pressure From Spring Helps Knitting Stitch

Some of the old-style Scott & Williams HH knitting machines have only the weight of the cylinder to hold

(*Continued on page 146*)

ECONOMY

is another reason why Armstrong's Cork Cots serve more spindles than any other roll covering

Low first cost is only one of the economies you enjoy with Armstrong's Cork Cots. These cots have also a long initial life, and you can rebuff them three or four times for greatly extended service. Each rebuffing costs as little as one-half cent per roll. You save time and money on assembly, too, because these cork cots have a ready-glued inner surface. Total roll covering costs are at least 50% lower with Armstrong's Cork Cots than with older type coverings!

Besides economy, Armstrong's Cork Cots give you better running work—stronger, more uniform yarn. Their superior friction helps produce uniform drafting, with a minimum of slippage, and eliminates "eyebrowing." Armstrong's Cork Cots reduce end breakage and minimize top roll lapping. The yarn they produce is even, because the cots are seamless, resist "hollowing out," and do not "flow" under pressure.

For the full story of how Armstrong's Cork Cots can give you better yarn at lower cost, see your Armstrong representative. He'll be glad to give you samples and prices. Or, write Armstrong Cork Co., Textile Products Dept., 3310 Arch Street, Lancaster, Pa.

ARMSTRONG IS HEADQUARTERS FOR

Roll Coverings, Long Draft Aprons, Roll Shop Equipment and Supplies, Loom Clutch Facings, Friction Let-off Strips, Brake and Clutch Inserts, Temple Rolls, Loom Bumpers, Preformed Cork Cones, Friction Drive Wheels, Spindle Washers, Winder Spindle Head Covers

BETTER RUNNING WORK — MORE POUNDAGE

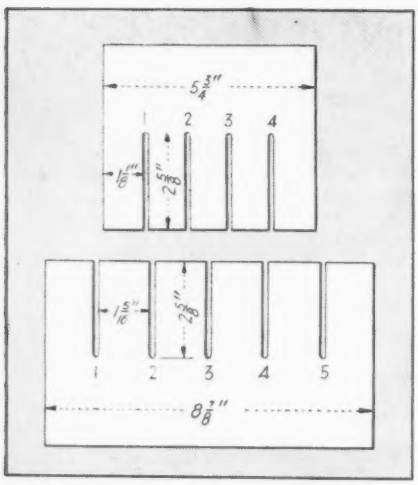
ARMSTRONG'S CORK COTS

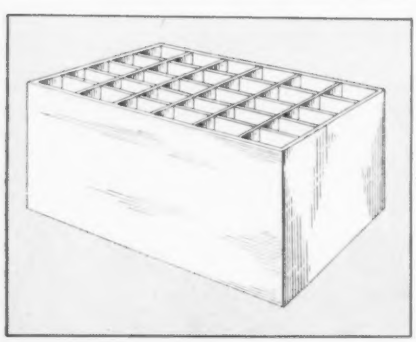
ACCOTEX COTS • ACCOTEX APRONS

the stitch tight. In cases where the cylinder is inclined to float up from its rest on the stitch-adjusting cam, I have installed a small compression spring, attached to the latch ring on the side next to the dial drive-shaft and extending down to exert a pressure on the sinker-ring cap. This very simple attachment helps to produce an even stitch and does not in any way interfere with any operation of the machine. *(K-215)*

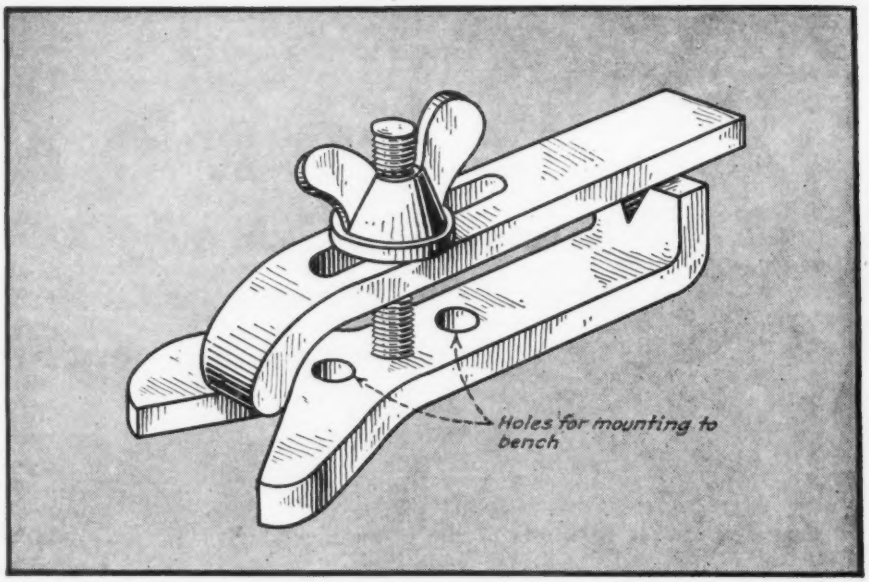
Rayon Kept Clean By Pasteboard Compartments

When quilling rayon filling we found that the wooden boxes in which we had placed cotton filling were unsuited, both because they allowed one filling bobbin to damage another and because they permitted the yarn to become soiled. To overcome this we used cardboard compartments as shown in the illustration. The dimensions given made separators that fit snugly into our boxes. In addition, we line the boxes with cardboard. (K-149)





Box compartments protect rayon filling.



Handy bench clamp or vise for oddly shaped parts.

Special Bench Clamp Holds Irregular Parts

Many times a special straddle or jaw type clamp is needed to hold an oddly-shaped part. The shop-made clamp shown in the accompanying diagram was designed to hold such pieces. It has been worth the time and material required to make it.

The clamp consists of two parts made from a ½ x 2-in. steel bar. Each end of the clamp base is notched, or splayed, to accommodate different-sized parts. Holes are drilled in the base part for fastening it to a bench. A threaded stud and winged nut holds the slotted top member of the clamp to the base. *(K-61)*

Calculation Short-Cut For Pinless Dressing

Quite a bit of time may be saved by a simplified traverse computation for use on the pinless type of wool dressing reel where the yarn is built up against a cone on the end of the reel. The speed of the traverse motion must be adjusted so that the yarn builds up at the same rate as the slope of the cone which means the volume of yarn put on by any given traverse is a constant. In less technical language, for any dresser or yarn system, the value of the constant can easily be found by determining the traverse ratio experimentally through the use of the following formulae to determine the constant:

(1) For systems where the yarn weight increases with the size,

$$\frac{\text{(Yarn) (Ends per Inch)}}{\text{Traverse}} = \text{Constant;}$$

(2) For systems where the yarn weight decreases with the size,

$$\frac{\text{Ends per Inch}}{\text{(Yarn) (Traverse)}} = \text{Constant.}$$

By averaging several values determined by experiment, the value of the constant can be found and future computation simplified.

On the woolen system, it develops that:

$$(3)\quad \frac{\text{(Yarn) (Reed)}}{10{,}000} = \text{Traverse ratio}$$

For example, the traverse ratio for a yarn weighing 75 grains for 50 yards and a reed of 6 dent 4, the traverse ratio would equal:

$$(4)\quad \frac{(75)\ (6)\ (4)}{10{,}000} = .180 \text{ traverse ratio}$$

Looking up the gear ratio on the chart furnished by the manufacturer, the gears to be used are found to be 30, 50, 30.

On the cut system this becomes:

$$(5)\quad \frac{(.116)\ \text{(Reed)}}{\text{Cut}}, \text{ or } \frac{(.116)\ (6)\ (4)}{15.5} = .180$$

On the run system this becomes:

$$(6)\quad \frac{(.0218)\ \text{(Reed)}}{\text{Run}}, \text{ or } \frac{(.0218)\ (6)\ (4)}{2.9} = .180$$

For cotton or rayon, because of its greater density and decreased loftiness, the constant in formula (3) becomes 20,000 instead of 10,000, that is,

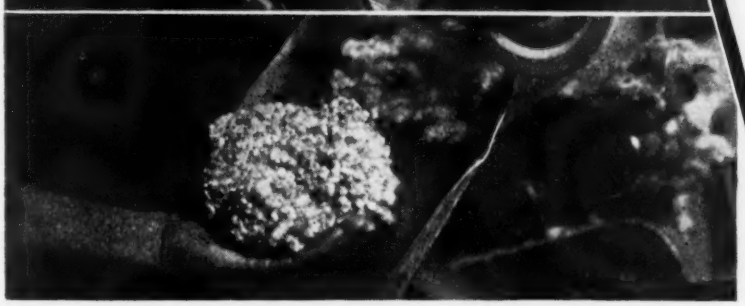
$$(7)\quad \frac{\text{(Yarn) (Reed)}}{20{,}000} = \text{Traverse ratio; or, } \frac{(75)\ (6)\ (4)}{20{,}000} = .090$$

On the cotton system this becomes:

$$(8)\quad \frac{(.021)\ \text{(Reed)}}{\text{Cut}}, \text{ or, } \frac{(.021)\ (6)\ (4)}{5.5} = .090.$$

Similar short cut equations may be developed for the traverse motion on any type of pinless reel and for any yarn numbering system. *(K-218)*

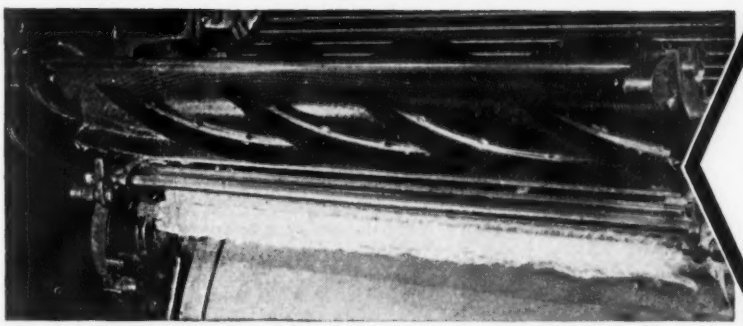
"FULLERGRIPT" is the Fuller Brush Company's patented method of gripping brush materials in a rust-resisting metal backing. The machine-controlled placing of materials in the metal backing results in a uniformly solid brush face, which can be fastened onto metal cores, or arbors. The density of the brush and the durability of the holding method means long life, better performance and serviceability.



All types of Brushes, Machine or Hand, for Textile and Finishing Mills.

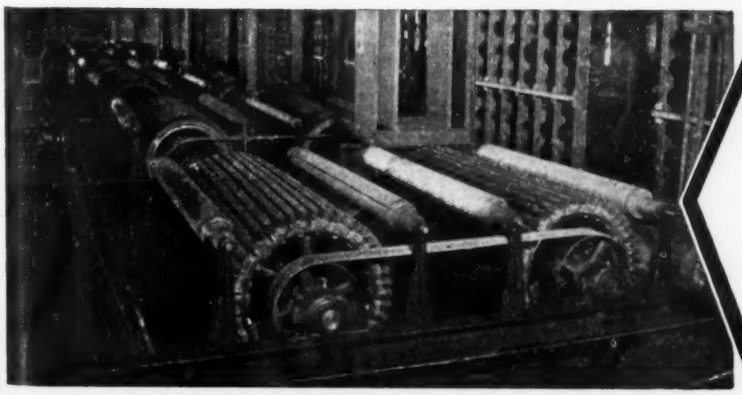
WORSTED-CARD BRUSHES

FULLERGRIPT Worsted Card Brushes, because of the densely packed brush materials, push the wool—*all* of the wool—down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal. (See cut.) Fullergript cylindrical brushes are proving helpful in three ways on worsted cards: As *feed roll brushes* to start the wool properly in the teeth of the first lickering; as *Morel brushes* to disentangle the burrs from the wool; as *transfer brushes* to carry the wool to the Morel roll and disentangle the burrs at the same time.



COTTON-FLAT CARD-BRUSHES

RIGID, metal-backed brush strips, pre-formed to the correct degree of spiral, can be easily attached to your present wood cores. The density of the brush with no gaps, prevents the accumulation of lint or lumps on your cards, and the stripper is cleaned more thoroughly. This means better carding.



THREAD DRESSERS

DISCARD wood lags with their variation in weight, warping, splitting, and falling tufts. Use Fullergript for better ventilation and increased production. Their are no gaps or tufts in Fullergript to allow threads to ride on the core. These brush strips are set in pairs equally spaced around the periphery of the spiders, and are easy to install. Their production life is longer because of the dense, massed bristle filling.

The FULLER BRUSH Company

3594 MAIN ST., INDUSTRIAL DIVISION 8C, HARTFORD, CONN.

THIS IS NO. 47 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

ADJUSTMENT OF TRAVERSE FRAME STOPS (No. 50 Winding Machine)

A micrometer adjustment may be obtained in setting both the Upper and Lower Traverse Frame Stops (A and B respectively in Fig. 1).

This feature is particularly important in the case of the Upper Traverse Frame Stop, for it makes it easy to establish a positive relationship between the Traverse Frame and the cone at the start of winding.

When the Stop is properly adjusted and the Traverse Frame correctly positioned at the start of a new cone, the first layers of yarn will be wound onto the cones securely, with no possibility of disturbance from the thread guide. This is especially desirable for fine yarns.

The Lower Stop may also be adjusted to a very fine setting, so that when the machine is once stopped, the Traverse Frame cannot be pushed beyond a predetermined stopping position.

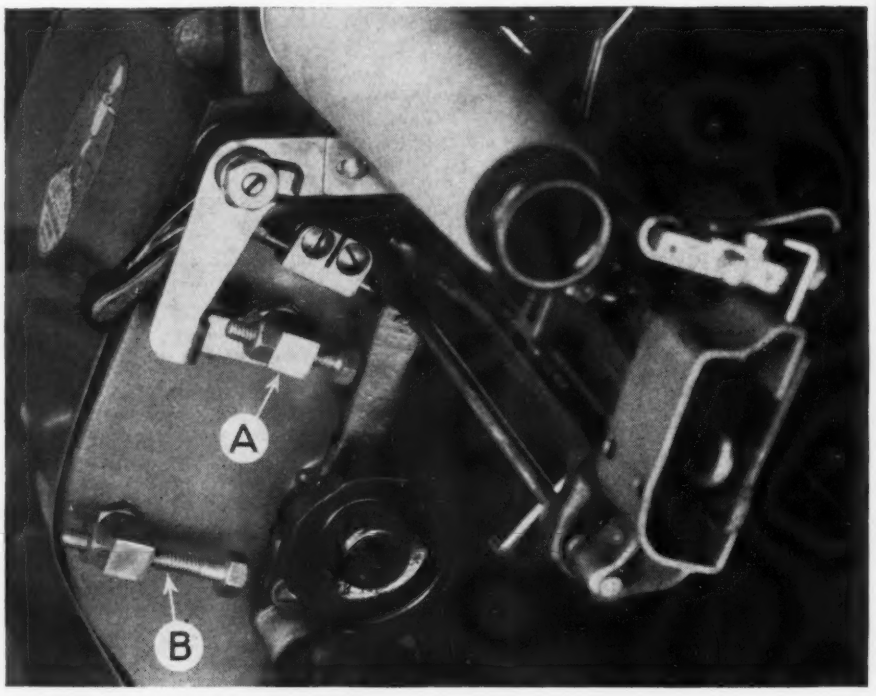


Fig. 1 Upper Traverse Frame Stop (A); Lower Traverse Frame Stop (B).

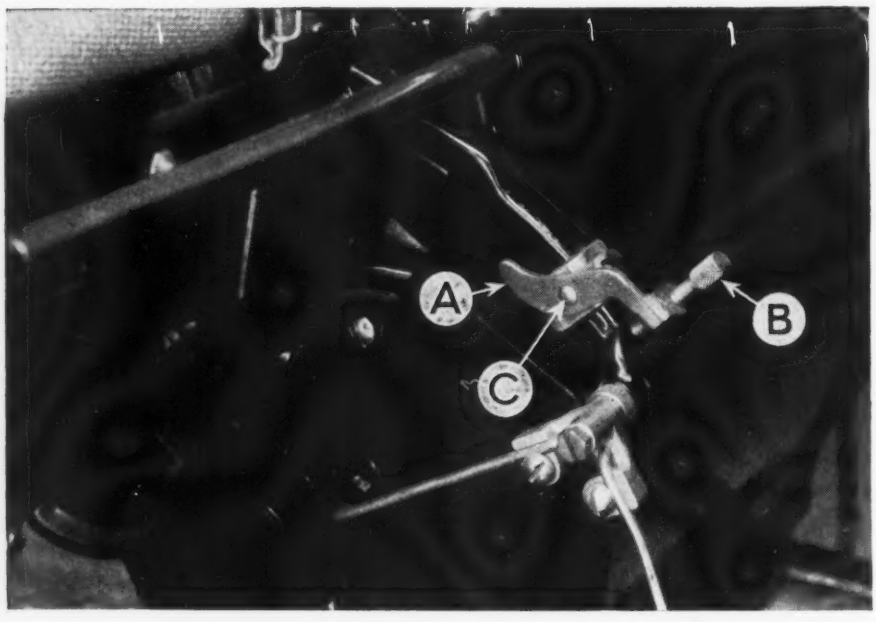


Fig. 2 Sensitive Sizing Gauge

Both Stops can be securely locked to the frame by nuts which will not work loose.

SENSITIVE SIZING GAUGE (No. 50 Winding Machine)

By use of the Sensitive Sizing Gauge 50-105AX (Fig. 2), a cone of any diameter can be accurately wound to size and the machine automatically stopped.

This gauge consists of a lever (50-1209, A in Fig. 2) through one end of which a screw (50-1210, B in Fig. 2) is threaded. The lever is fulcrumed on a pin (C) attached to the regular stop 50-105CA, which is in turn attached to the Dog Segment at the point where it is roughly decided to stop the machine.

Adjustment of the Screw (B) which bottoms on the top of the segment will raise or lower the Lever (A) to any exact desired position. When the Traverse Frame Back comes in contact with the Lever, it knocks off the Segment, trips the Dog and automatically stops the machine.

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Pete & Bill

OWNERSHIP OF MILL VILLAGE

Should Mills Encourage Loyal Workers to Purchase Homes in the Village, or Should the Mills Continue Corporate Ownership?

PETE, I HEAR OUR MILL VILLAGE IS OPERATING AT A LOSS DESPITE THE FACT THAT EVERY HOUSE IS FULL. LOOKS AS IF THE COMPANY WILL HAVE TO BUILD MORE HOUSES AFTER THE WAR TOO.
I KNOW MANY MILL VILLAGES OPERATE AT A LOSS, BILL, BUT IF WORKERS WOULD BUY THE HOUSES AND REALLY MAKE THEM THEIR HOMES WE WOULD SAVE THAT EXPENSE AND HAVE MORE LOYAL AND BETTER SATISFIED HELP.
1
THAT'S NOT PRACTICAL PETE. WHEN WORKERS BUY, THEY WANT A HOUSE OR A FARM AWAY FROM THE VILLAGE. THEY JUST DON'T LIKE TO LIVE WITH A MILL 24 HRS. A DAY AND SEE THE SAME FACES SO OFTEN.
MOST MILL VILLAGES ARE PRETTY ATTRACTIVE BILL, WITH PLENTY OF ROOM FOR GARDENS. PERSONAL PRIDE IN HIS OWN HOME WILL MAKE A WHALE OF A DIFFERENCE IN THE WORKER AND THE VILLAGE.
2
YOU CAN'T DO THAT, PETE. TOO MANY FOLKS ARE ROVERS, AND RUN FROM MILL TO MILL. YOU'D ALWAYS HAVE A PROBLEM OF BUYING AND SELLING THESE PLACES. BESIDES, UNDESIRABLES MIGHT GET PERMANENTLY LOCATED.
THE REQUIREMENT OF LOYAL SERVICE FOR A PERIOD OF YEARS BEFORE A WORKER CAN PURCHASE A HOUSE WILL ELIMINATE THAT. THE ENTIRE VILLAGE NEED NOT BE SOLD.
3
JOE, YOU HAVE ALWAYS LIVED IN THE VILLAGE. WHAT DO YOU THINK?
BOYS, SOMETIMES I THINK I WANT TO OWN THE HOUSE I'M IN, AND THEN AGAIN YOU COULDN'T GIVE IT TO ME. THE FOLKS OUT THERE WILL HAVE TO ANSWER THIS ONE. WRITE US HOW YOU FEEL ABOUT IT!
4

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you, contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

Letters From Readers

Urges Modified Employee-Rating

"Rating Employees"
(Pete & Bill, May, 1944)

Dear Pete & Bill

To go all-out for employee rating, as Pete suggests, is dangerous business. I'm going right down the middle of the road on this by suggesting a modified plan of rating. Don't trust to your memory or personal feelings; they have a tendency to be less reliable than most of us care to admit. On the other hand, when you attempt to know all things about all persons, look out again.

Here's a plan I like and it will work:

1. Fill a card record for all employees—just a simple 5"x8" will do.

2. Make the record tell exactly what kind of a worker Joe Doakes is by what he does or does not do in his line of duty—the things that make him different from the other fellow—and you know they're all different. If he does a good job, put it in his record and tell him so—let him read it. And if he muffs the ball, put it in the record and tell him so, but be sure he has his say either directly or indirectly. Give him a chance to tell his story; its *his* record you know. Have a third unbiased person present if needed, but above all you must *demand fairness* from yourself on behalf of the worker.

3. Take action as the case may merit and conditions warrant—

a. If he continually misses, on whatever pretext, find the reason. Help him if you can, but take action you must.

b. If he shows promise by several acts of improvement in work-methods, attitude, etc., get him in line for something better. Let him know how you appreciate it.

In all instances insist on fairness and let the worker know it. Sometimes you'll be misjudged, but in the long run you'll come out O.K. (PB 183)

Key Workers Admonished in Verse

"Keeping Key Workers"
(Pete & Bill, July, 1944)

Dear Pete & Bill

Regarding the keeping of key workers, may I suggest the following poster for Pete's department?

Key workers, please stay on the job
Till we have licked the Axis mob.
Your contribution here is great;
A home-front soldier's rank you rate,
And G.I. Joe knows well enough
That guys like you turn out the stuff
Without which wars cannot be won—
Supplies and weapons by the ton.
Green workers cannot fill the bill,

MEMORIES OF OLD MAN CARELESSNESS—*By Martha B. Pittenger*

No. 21

October's Bright Blue Weather

Yesterday, Mary Jane was looking out the window at the mill. Today, she is looking out the window from a bed in the hospital.

Nothing exciting had happened. It was most certainly the least-suspected chance for an accident. To be sure, a lot of people raise the mill windows and nothing comes of it.

Mary Jane was weaving when suddenly she decided she would look outside—catch some fresh air, while she scanned October's bright blue skies.

The window proved stubborn to raise, and Mary Jane was rather determined once she had promised herself that she was going to have a look-see.

An ample supply of elbow grease would not budge the window, but, I confess, I was beside her and urged her on. So Mary Jane stooped slightly, throwing the strain on her back, as she pushed upward. The window went up with a jerk, and so did a ligament in the small of her back.

I saw the blue skies all right, but I imagine that Mary Jane was seeing stars. The doctor said she would have to lie flat on her back for several weeks with a plaster cast supporting the torn ligaments.

Yes, Mary Jane now has plenty of time to watch the blue skies—even the gray ones of November. While I shuffle along and rustle up another accident.

They lack your knowledge and your skill—
So stay right here and speed the day
That brings our boys back home to stay! (PB180)

Should Rely on Board

"Keeping Key Workers"
(Pete & Bill, July, 1944)

Dear Pete & Bill

The job of every patriotic person today must be that job in which he, personally, is best suited to further the war effort. Not every one can shoulder a gun, but the production army is just as responsible as the military army, for the victories won or the defeats suffered. I believe that Bob should rely on his Draft Board's decision, and, if they consider his job essential, he should accept this occupational deferment willingly. (PB 182)

"We Must Produce"

"Keeping Key Workers"
(Pete & Bill, July, 1944)

Dear Pete & Bill

They may be needed in the armed forces, but, with the importance of machine-fixers and other key men to the plant, I believe they should remain on the job, so that production may be kept up to the standard. We must produce—that should be a slogan with all factories. (PB 184)

Directory of Testing Laboratories

DIRECTORY OF COMMERCIAL AND EDUCATIONAL TEXTILE TESTING LABORATORIES; Textile Foundation, National Bureau of Standards, Washington 25, D. C.; 25¢.

This complete, up-to-date directory lists textile testing laboratories alphabetically, according to tests which they are equipped to perform, and geographically.

Welding and Cutting

THE OXY-ACETYLENE HANDBOOK; The Linde Air Products Co., 30 E. 42nd St., New York; 600 pages; $1.50.

A comprehensive and authoritative 600-page textbook covering basic oxy-acetylene welding and cutting procedures. Instructions contained cov handling of all commercial metal This how-to-do-it book is intended a reference book for plant engineer superintendents, and master mecha ics.

Properties of Textile Fiber

A BRIEF STUDY OF TEXTIL FIBERS AND THEIR PHYSICA AND CHEMICAL PROPERTIE by William Huber; Textile Schoo Rhode Island School of Design, Prov dence, R. I.; 73 pages; $1.00.

This book covers the physical an chemical properties of wool, silk, co ton, flax and ramie, regenerated fibe and synthetic fibers. Included unde regenerated fibers, aside from the var ous types of rayons, are Aralac, soy bean, peanut, and mineral fiber. Nylon Vinyon, Saran, and rubber are covere under synthetic fibers. Material co tained is quite elementary and i tended primarily for instruction use.

Other Publications

TEXTILES—TESTING AND RE PORTING (Fourth Edition), Com mercial Standard C S 59-44; Superin tendent of Documents, Washingto 25, D. C.; 45 pages; 10¢.

POSTWAR EMPLOYMENT AND THE LIQUIDATION OF WA PRODUCTION; Committee for Eco nomic Development, 285 Madiso Avenue, New York 17; 22 pages.

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Increase Yield by 3%... Improved Stock Through Better Scourability

Many alert manufacturers, constantly looking for new ways to improve their products, will find this experience both informative and interesting. It may also point the way to more efficient, economical production.

Waste and costly losses in processing was the reason a certain manufacturer decided to search for a new processing oil. Products formerly used did not offer any appreciable increase in the weight of wool . . . yields were greatly reduced. He called a Sun Textile Man who studied his problem and recommended a Sunotex Oil.

Three extra pounds of finished wool, to every hundred, are the results now achieved with Sunotex. Under the same operating conditions, a profitable 3% increase in yield had been realized! This was due largely to the excellent "wetting out" properties with high surface tension of Sunotex, plus its better penetrating qualities which resulted in less breakage of fibers.

Better scourability is another advantage of the change, resulting in cleaner wool and improved finished stock.

Sunotex Oils have helped many other textile manufacturers to improve production by overcoming their problems, and can help you, likewise. Sun Engineers are also available to help you prolong the life of your equipment and reduce maintenance costs through proper lubrication. A copy of the new manual, "How To Get The Most Out Of Lubricants," will be sent without cost or obligation. Write . . .

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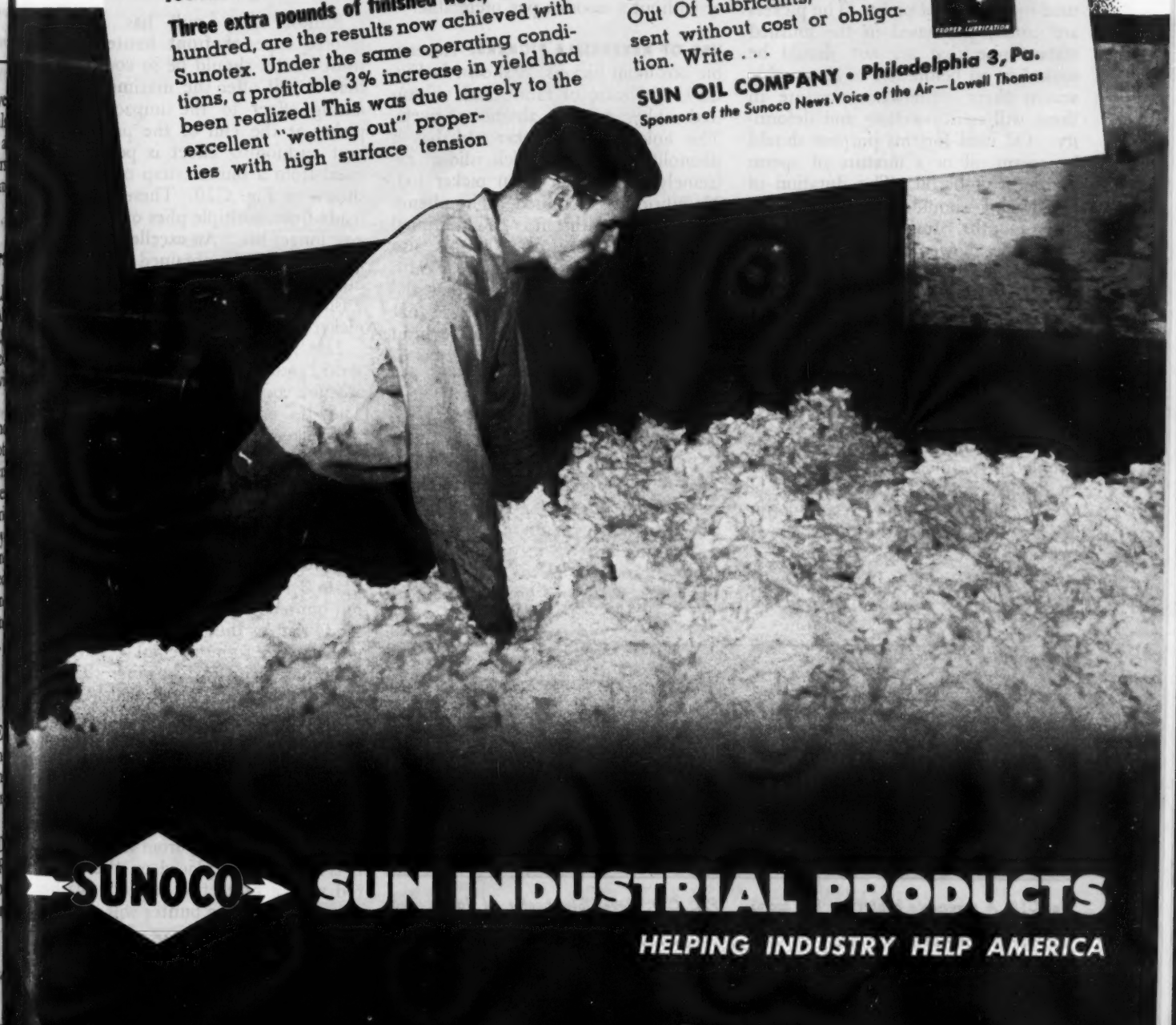

SUNOCO **SUN INDUSTRIAL PRODUCTS**

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LOOM LEATHERS—By Ivar Moberg

PICKERS. Various materials are used for pickers, such as leather, rawhide, rubber-fabric composition, fiber, etc. A reversible C & K box-loom picker, such as is commonly used in cotton weaving, is shown in Fig. C18. This is made of water buffalo rawhide, a material which is almost universally used in this type of picker. The pickers are usually purchased in the finished state; those that are not should be soaked in oil before use to thoroughly season them, otherwise moisture in them will cause swelling and deformity. Oil used for this purpose should be sperm oil or a mixture of sperm and neat's-foot oil. The duration of submerging should not be less than three months, after which the pickers should be allowed to dry for another two or three months.

Pickers should be so ordered that they will fit the loom without filing or cutting. Rivets which hold the layers of rawhide together should be set well below the surface, otherwise they will wear a picker slot in the box back. Sometimes, but sparingly, a good grade of lubricating oil should be spread evenly on the picker rod with a brush or swab. The rod must always be clean and free from accumulating black oil, otherwise the oil is apt to get onto the warp yarns.

The back packing, or bunter, must be so constructed that it will absorb the impact of the picker, both at the head and at the base. If the bunter does not contact the picker at the points stated, its life is cut short by excessive wear of the picker-rod hole. Also, it has a tendency to break along this line. A bunter can be made of old leather or of discarded canvas lug-straps. Nails should not be used to hold the bunter together as they are apt to injure the picker. Glued, with or without a wooden peg preferable.

USE OF REVERSIBLE PICKERS. Reversible box-loom pickers, as shown in Fig. C19, are made of fabric and vulcanized rubber; note the absence of rivets. The hole for the picker rod has a phenolite bushing which slides extremely easily on a clean picker rod. No lubricant is required. The phenolite bushing withstands the frictional heat of the picker rod, and is also wear-resisting to a high degree. With this picker, it is paramount that the back bunter be made perfectly so that it will contact the picker at the head and the base.

These pickers should be bought and used with a back bunter made by the manufacturer and of the same material as the picker.

Pure rubber bunters are not practical as they have a tendency to cause rebounding of the shuttle. Bunters can also be made from leather.

In using any of the reversible box-loom pickers described, it is essential that a suitable front bunter be used.

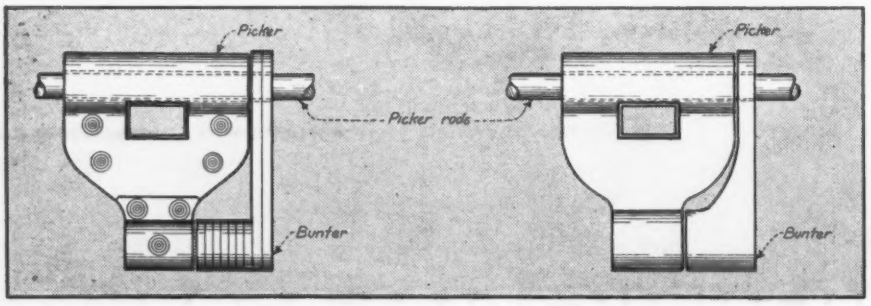

Fig. C18. A reversible bunter for box looms. This bunter is made of water buffalo rawhide and must be treated before use.

Fig. C19. Reversible bunter of fabric and vulcanized rubber containing a phenolite plastic bushing.

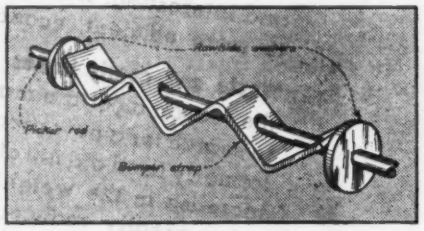

Fig. C20. Front bunter unit made from leather with rawhide bushings.

Almost every mill has its own favored type of front bunter. The front bunter should be so constructed that it will offer the maximum cushioning effect to the impact of the picker at the end of the pick. The best cushioning effect is perhaps derived from a bunter strap of the type shown in Fig. C20. These are often made from multiple plies of leather to give longer life. An excellent cushioning effect will be obtained when these bunter straps are used with rawhide washers, as shown in Fig. 20, on the picker rod.

Life of such bunters are relatively short, and from this standpoint, they are not very popular with loomfixers. They do, however, prolong the life of the picker. Front bunters are usually made of leather washers, rubber tubing, fabric rolls, etc. The most practical of these is the fabric-roll type of bunter.

FABRIC-ROLL BUNTER. Strips of fabric, 2½ to 3 in. wide produce these fabric-roll bunters. A rod of the same diameter as that of the picker rod is bent at one end to form a crank. This rod is supported by two bearings that are spaced apart equal to the width of the strips. Strips of fabric are then wound as tightly as possible upon the rod until a diameter of approximately 1½ in. is obtained. The last lap is either glued or wound with a strong string to keep the roll from unwinding. The rod is then removed from the roll and it is ready to be placed on the picker rod with a protecting rawhide washer at each end. The bunter will produce a fairly good cushioning effect.

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DAVID DIETZ, *Science Editor of the Scripps-Howard Newspapers, Author, and Pulitzer Prize Winner*

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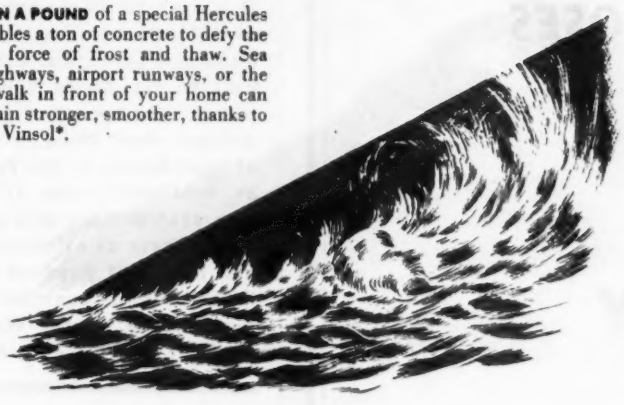

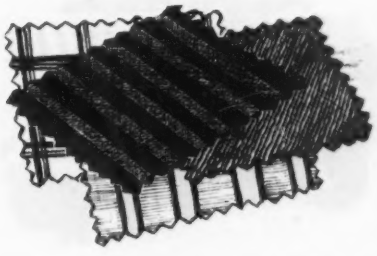

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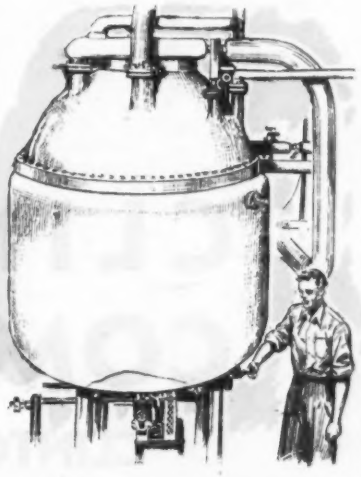
CONSERVING CRITICAL MATERIALS is but one important contribution of Hercules Poly-pale* resin to varnish resin producers. This polymerized rosin is permitting savings of glycerin and other scarce materials as high as 30% without sacrificing quality.

LONGER LIFE FOR ADHESIVES is but one of scores of product advantages gained with Hercules Staybelite*, another rosin chemical. Its ability to retain a tacky nature indefinitely is important to modern surgical and industrial tapes, masking compositions, and many other adhesives.



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Round Table

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Questions How to Combat Risk of Textile Fires

As fire risk is great in textile mills, do you consider oil leakage from oil pipes and bearings dangerous?

Are accumulations of waste dangerous?

How can those two things be combatted?

If a regular fire-fighting force is advisable, how should it be trained; should it be recruited from the mill employees or made up of regular fire fighters who are employed for this purpose only? *(R-88 Essex, England)*

Stopping Broken Picks Caused by Ballooning Yarn

Broken picks present an interesting subject particularly those from the source mentioned by *R-47*; namely, ballooning under the shuttle.

In regard to the last two paragraphs of the inquiry, placing leather on the

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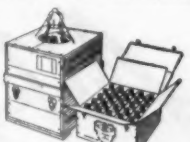
"B&A" Nitric Acid, Reagent, A.C.S.
Sp. Gr. 1.42
"B&A" Ammonium Hydroxide, Reagent, A.C.S.
Sp. Gr. .90
"B&A" Acetic Acid Glacial, Reagent, A.C.S.



Quantities: "B&A" Reagent Acids and Ammonia are available in carboys as well as in five-pint or one-pound bottles, which are obtainable in case lots or less.

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shuttle box is an excellent trick. The leather should last a year or longer if the race-place alignment is satisfactory. In time the shuttle will wear the leather, but the nice part about this is that the leather is easily replaced. Placing the leather face up (the smooth open-grain side as some call the hair side) presents a smooth surface and offers little chance for filling jerk-ins due to the filling yarn snubbing onto rough leather surface. Some fixers even shellac the leather to obtain that extra-smooth surface so highly desirable.

It is possible to use mica-inserted box plates (or even fibre), but conditions of ballooning yarn may result in broken picks the same as on the cast iron or steel plates. These looms are under ten years of age and can be considered practically new, so it may be possible some suggestion on other methods of overcoming the trouble would prove helpful in removing the "bugs" from a new loom.

One method useful in the prevention of cut filling yarn is to remove the steel box plate and slope the front edge in a slight bevel from front to back ½ in. to ¾ in. towards the center near the box mouth and back to the slot. This requires that excess metal be cut away on a planer or grinding tool—it can also be accomplished with care on a belt sander. Thus when the shuttle picks out, the ballooning yarn flies under the shuttle but has sufficient freedom within the beveled-out section to allow the shuttle to pass without bruising or cutting the yarn. There is no danger of shuttles flying in edgewise as sufficient flat surface on the plate remains to control the true shuttle flight.

Along with the foregoing, some boxes are set to pitch slightly downward toward the race plate; and when the shuttle picks out, it is raised a trifle above the front edge of the bottom plate, avoiding contact with the yarn. If a straight edge on the plate shows the outside box end lower (which is not uncommon), raise the outside end slightly so the front end pitches downward. If a perfectly level plate is desired, the front can be cut down on a slope. When the shuttle picks out, it will ride approximately ⅛ in. above the cut-down section and prevent pinching the ballooning yarn.

Ballooning yarn is a troublesome obstacle to overcome, and a fix that may cure the trouble on one loom, may not have the answer on another loom. It occasionally happens that merely transferring the shuttle from a defective loom to a trouble-free loom,

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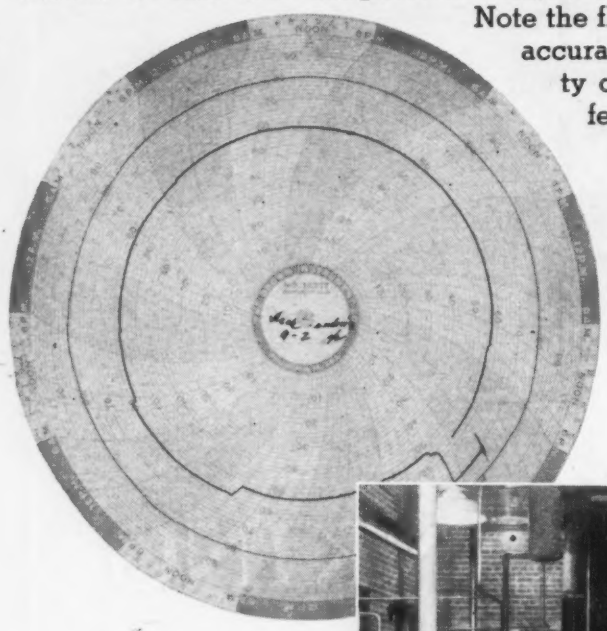
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

ACCURATE

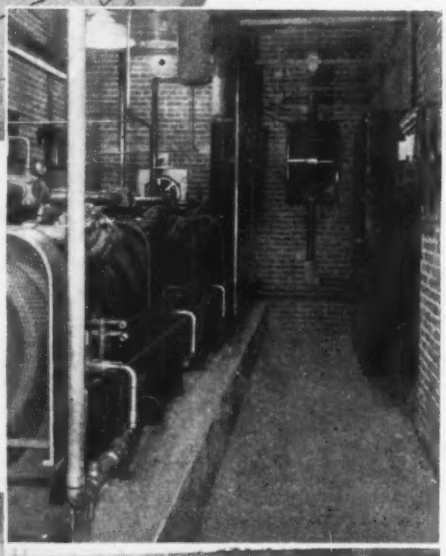
YEAR 'ROUND TEMPERATURE AND HUMIDITY CONTROL AT ANY LEVEL

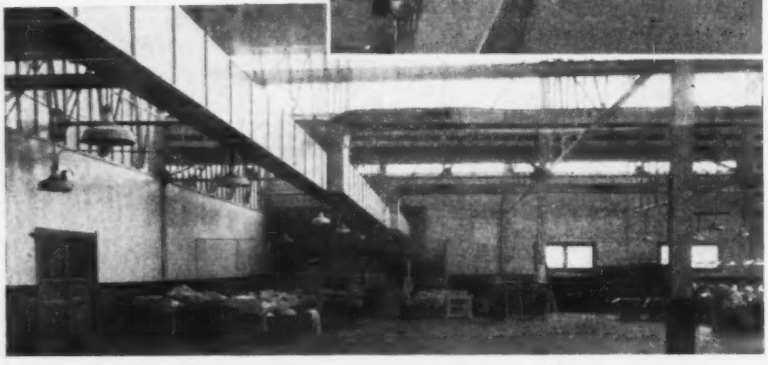
The accompanying chart illustrates the day-in and day-out accuracy of temperature and humidity control maintained by a Bahnson Air Conditioning System in the deep South. Outside line—temperature. Inside line—humidity. Note the flexibility and accuracy of humidity control at different levels.



150 TONS REFRIGERATION

This compact room houses all the machinery required for the 10-stage production of 150 tons refrigeration capacity, an example of the advanced practical knowledge of the Bahnson engineering staff.





Showing main supply duct installation in same hosiery mill. Note daylight construction, which offers the ultimate in problems of accurate temperature control.

Bahnson System

AIR CONDITIONING ENGINEERS

THE BAHNSON CO. WINSTON-SALEM, N. C.

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and vice-versa, often proves effective. This requires slight adjustment to boxes and checks. Occasionally, sizing gum burnt dark and adhering to the shuttle near the bottom is a condition often overlooked. This indicates that the shuttle is rubbing near the box front in some manner and pinching the yarn. As the shuttle picks out, the yarn breaks and a fixer is often fooled into believing the yarn cut beneath the shuttle. The trouble is usually fixed by sanding the burnt wood or fibre and polishing the shuttle.

There is still another trick some fixers use in controlling the yarn. The yarn groove from the guide on backwards is usually too wide and yarn has too much freedom. By cutting an additional groove in the shuttle in the exact center of the original groove but about $\frac{1}{8}$ in. in width and $\frac{1}{16}$ in. in depth from the guide on back the full length, the yarn is carried inside this narrow groove and ballooning is often prevented. The groove should not be a half round, but rather a half-square shape with straight edges in depth and width. *(R-85)*

TEXTILE WORLD Issues Desired By Institute

The Philadelphia Textile Institute would like to obtain the following back issues of TEXTILE WORLD in order to complete its library files and will be willing to pay for them:

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v.1-6, 1879-1885

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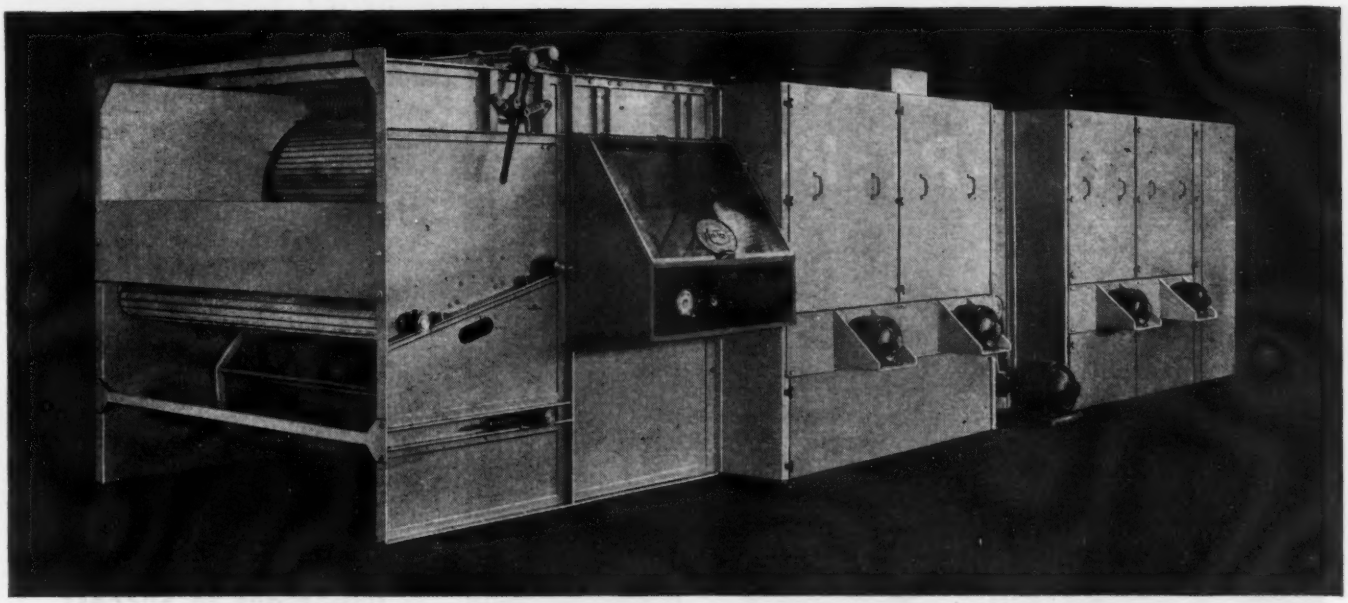


YOU CAN SAVE MONEY IN THE DYEHOUSE BY CONTINUOUSLY RINSING, EXTRACTING, AND DRYING RAW STOCK

The line cut at the bottom of this page shows the Hunter engineered, continuous range method of handling stock directly from the Raw Stock Dye Kettles to the Dryer discharge. The method of operation is simple:—

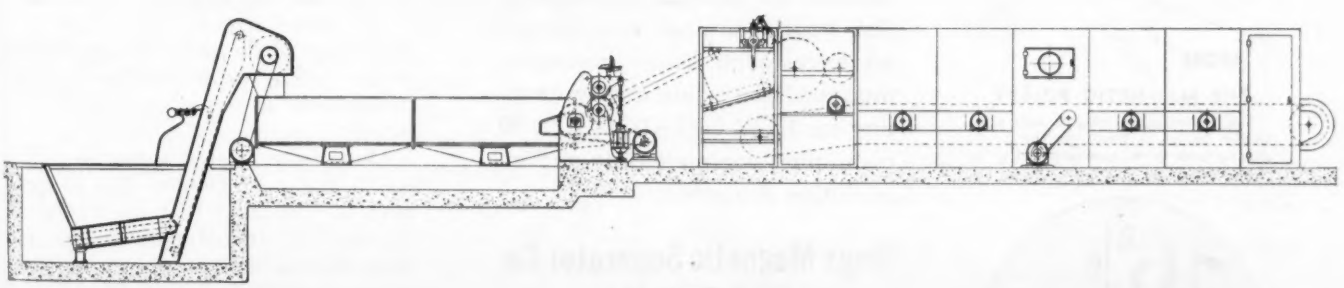
The Dye Kettle "cheese" is dumped into the Hunter Pit Feed. From there it goes into a Hunter Rinse Bowl, which rinses stock free and clean of all residual dye, through Hunter Pneumatically Operated Squeeze Rolls, and directly into the Stock Dryer.

The unit shown is capable of producing up to 1200 pounds of dyed wool per hour.

Please note blow-up section in Dryer whereby stock is turned over by uniquely controlled airstreams.

This is the latest and most efficient method of handling stock from the Dye Kettles.

Hunter Equipment is also available for blending and mixing wools, together with the necessary conveying and blowing systems. You can receive full details by writing to James Hunter Machine Company.



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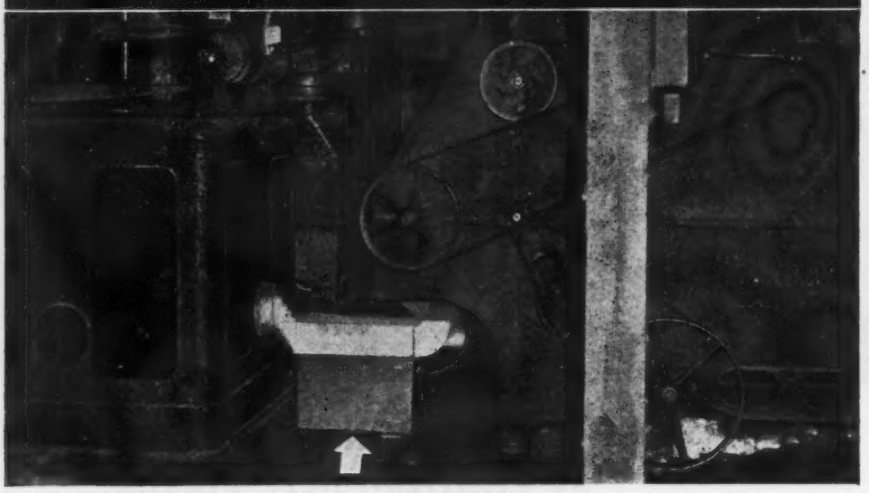
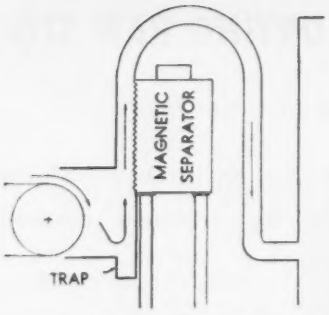
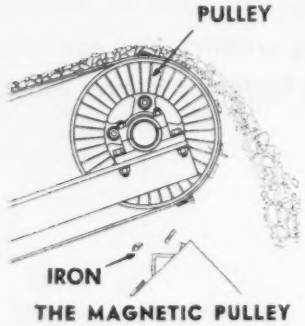
HOW TO REDUCE Opener-Picker Fires





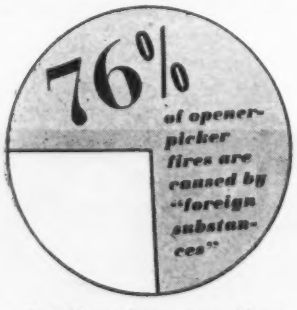
THE VERTICAL PLATE MAGNET

For installation in duct work where cotton is drawn from bale breaker or conveyor by suction. Powerful! High Intensity! Holds iron fast.



THE MAGNETIC PULLEY

For installation above belt conveyor or as a head pulley . discharges iron automatically in the latter case. Ask for Catalog 99.



Ask Your Insurance Man!

DINGS MAGNETS PROVEN HIGHLY SUCCESSFUL!

". . . had a fire almost every week before installing magnet but only five fires since and three of these were caused by chokes."

The above report is from a leading textile mill. This is one of the more outstanding cases but all agree that Dings Magnets will prevent almost every fire caused by ferrous metal. And, remember that nearly 50% of cotton mill fires start in opening or picking and 76% of these are caused by foreign substances! Ask your insurance man his experiences with Dings automatic magnetic protection and write today for NEW CATALOG NO. 99 containing complete data and installation diagrams.

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Dings MAGNETIC SEPARATION HIGH INTENSITY

v.83, 1933 no. 3 Feb., no. 7 June
v.84, 1934 no. 3 Feb., no. 8 July and Index
v.85,1935 no. 1 Jan., no. 3 Feb., 6 May, 13 Dec. and Index
v. 86, 1936 no. 2 Feb. and Index
v.87, 1937 Index only

[TEXTILE WORLD's supply of these issues has long since been exhausted but perhaps some readers have these numbers and will be willing to send whatever they have to Miss Rebecca K. Bonner, Librarian, Philadelphia Textile Institute, Broad and Pine Streets, Philadelphia 2, Pa.—*Ed.*]

Attitude Toward Ideas Is Important to Success

New ideas that are really worthwhile are rare in any line of activity. In the textile field, the past few years have seen many changes in its methods of operating in practically all departments. When old ways and methods fail to meet the situation, new ideas must be brought into being. It is the business, and I think the intent, of the machinery builders to investigate carefully all the different ideas that are brought to their attention, or which their own research department may devise. And in so far as it is practicable, to develop those which seem to have merit.

When a reputable builder of machinery is ready to put something new on the market, the least that one can do is to give him credit for fair judgment in his attempt to improve operating conditions, and to give careful consideration to what he has to offer. Some changes may be adaptable to all conditions, while others may meet only some special situation and be of little value outside of that particular field. But, until the builder can get the considered judgment of the user, he may be lacking that which is of most value to him; that is a knowledge of the practical application of the idea to textile conditions. This information is not always easily obtained.

One of the greatest difficulties with which the manufacturer has to contend in obtaining that knowledge is getting his potential users to approach these changes with an open mind; and to carry on their investigations with a desire to find, if possible, something of value in the new ideas. That this is a real difficulty and not an imaginary one is, I think, made evident by the lack of enthusiasm with which most changes are received by the heads of departments.

The idea of investigating new

Hidden Charm

Yes there's "hidden charm" in this exquisitely fashioned evening dress. For the designer who created it could never have achieved the style appeal that sold it unless the material he used had been properly processed. That's why so many leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C. P. P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C. P. P. processing agents that are made specially for the textile industry. Or, write to our Industrial Department at Jersey City 2, New Jersey.

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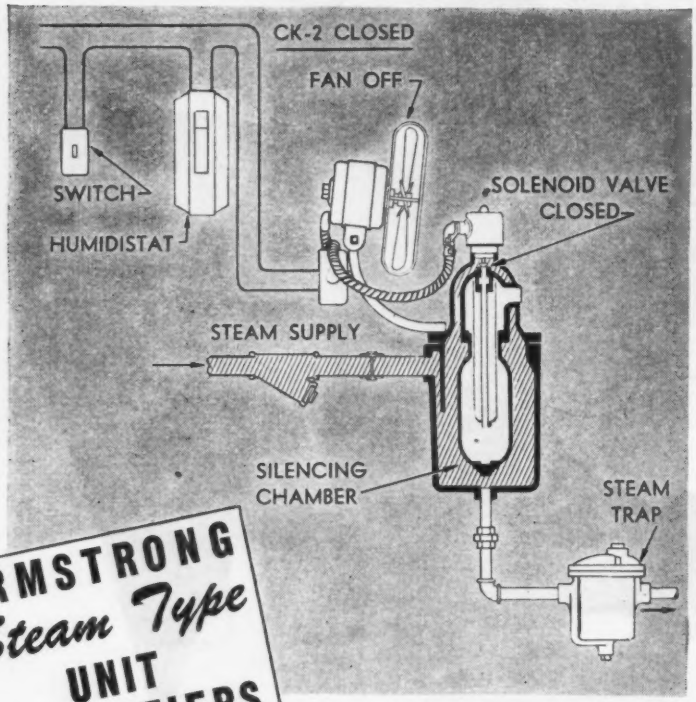
DON'T WASTE SOAP
Vital materials needed to win the war are used in making soaps.

HERE'S THE *Newer, Better* WAY TO MAINTAIN CORRECT HUMIDITY



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Now you can have the benefits of controlled humidification easily and economically. Electrically operated Armstrong steam type humidifiers maintain desired humidities within close limits.

The first cost is low. One hundred dollars invested in the Model CK-2 buys humidification for as much as 40,000 cu. ft. of space. That's complete with all accessories including sensitive Friez humidistat. Multiple installations meet any requirements. Larger models also available. Installation cost is low. The humidifier connects into existing steam lines like a unit heater. The operating cost is low. Steam required for the Armstrong humidifier is available in most plants for less than $1.00 per ton. There is an Armstrong representative near you. Let him give you complete information. Write today for his name.

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What Armstrong humidification will do for you!

1. Increase quantity and quality.
2. Reduce waste.
3. Reduce fibre breakage due to brittleness.
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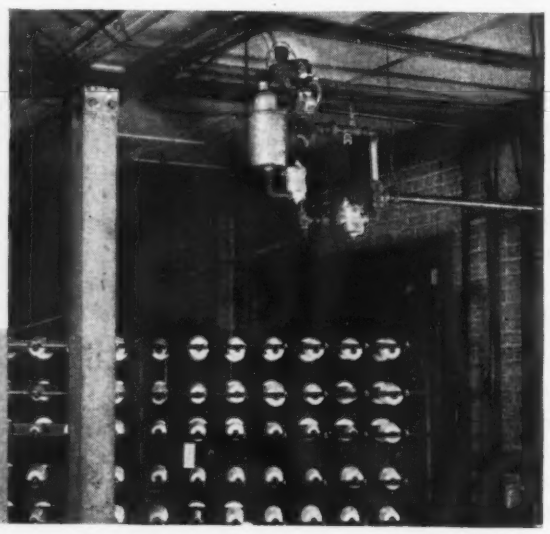
6. Provide healthier working conditions.

WRITE FOR BULLETIN 158

Contains data on humidity, steam type humidification, charts, diagrams, pictures. Educational, informative. Write today.



ARMSTRONG — INVENTED BUILT SOLD STEAM TRAP

methods or new machines with the sole purpose of finding some weakness, or trouble-producing feature, may have some merit. But, looking for trouble in something new might be of value were it not for the fact that trouble is with us, in some form or other, in practically all the methods which we now employ; and expecting something new to be free from trouble is hardly a fair attitude to take. The question in our minds, when making an investigation, should be, "Is there anything of value? Is there some point or feature, that has some slight advantage over the older method?" This need not be something revolutionary. Will the new method, in some particular feature, do the work better than the old? If it will, then it is a step in the right direction and should be given credit to that extent.

It is not an easy matter for men to change their points of view, especially when related to matters which have been common practice with them over a period of years. Also, it is quite natural for men to feel that in their own departments they themselves are experts. They are apt to view with suspicion any departure from that to which they themselves are accustomed. Many seem to think it a mark of cleverness to try and discredit any change from regular practice. Such an attitude, however, always carries with it an element of danger to one's self or to his reputation as an expert. It may happen that a new method will, under careful management, develop into something worthwhile. And that is something which he as an expert should have visualized. The critic will then be under the necessity of justifying himself for the attitude which he has taken in regard to it.

Giving careful consideration to new ideas or suggestions can do no harm, and it is one of the "secrets" of success. *(R-86)*

Protector Rods Should Be Adjusted to the Loom

Answering the question of *R-74* on protector rods, I don't see why the speed of the loom makes much difference on protector rods (two piece or permanent) providing they are set up properly.

The inquirer must be having some critical trouble on misadjusted rods, or otherwise the connectors would not be slipping so often. He favors a permanent rod and I agree with him. It is very seldom that a rod breaks and cannot be repaired.

Many weave sheds carry extra rods.

These Plans for the Future have been a Century in the making

CHENEY PRODUCTION today, as in four previous wars, is concentrated on filling urgent military needs.

But already Cheney Brothers are planning for the period after the war is over—and putting into these plans all the knowledge and skill of a century's textile experience. For ever since 1838 the Cheney name has been identified with fabrics of unexcelled distinction—lovely velvets and decorative fabrics for America's wardrobes and homes.

And the Cheney tradition of excellence will be maintained in the future just as consistently as it has been in the past.

So when the end of the war permits the expansion of Cheney facilities, there will be a host of newer, and even finer Cheney fabrics to fit in with your plans for postwar business.

And in the meantime, *this* plan will bring Victory sooner: buy—and keep on buying—War Bonds!

★ CHENEY FABRICS

CHENEY BROTHERS

Manufacturers of fabrics of exceptional quality since 1838

Velvets—Pile Fabrics—Upholstery and Decorative Textiles
Cravats—Men's Wear Fabrics
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MILLS AT MANCHESTER, CONN.

ALSO AT MANCHESTER, CONNECTICUT, A SUBSIDIARY...PIONEER PARACHUTE COMPANY

THERE'S NOTHING WRONG WITH THIS PICTURE

that *SPEEDI-DRI* will not cure

THE old-fashioned costume is in keeping with the old-fashioned cleaning methods. If you wouldn't tolerate the one, why put up with the other? The modern way to remove grease and oil deposits from your floors—the SPEEDI-DRI way — eliminates all the cumbersome and expensive paraphernalia of the old days and does the job better, more economically, and with less labor.

SPEEDI-DRI is a white, granular substance that is spread by hand and cleaned up with a stiff broom. It soaks-up oil and grease like a blotter absorbs ink. As soon as it blankets your oily floors, the danger of slipping accidents ends. It will not readily burn, even when saturated with oil. It saves shoes from oil-rot and helps to prevent industrial skin-diseases. Test it and you'll use it by the ton, as many other plants are now doing. Write for literature and FREE SAMPLE.

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.
Midwest & South—Waverly Petroleum Products Co., Philadelphia 6, Pa.
West Coast—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SPEEDI-DRI
OIL AND GREASE ABSORBENT

These rods should not be used unless a broken rod cannot be repaired. Interchanging rods for temporary repairs or for replacing rods that will require but a few minutes work is not satisfactory as two rods often do not have the same alignment. This has often been proven when a rod from one loom has been used as a replacement for another loom.

Fixers often have to readjust daggers to hit properly, as one dagger may be shorter and a piece will have to be welded on or the dagger drawn out; or if too long it will have to be ground down shorter. So when placing repaired rods back on the same loom much trouble can be avoided.

Protector daggers should be uniform in thickness, if not they have a tendency to get out of alignment. This is also true with knock-off blocks.

Adjust binders so that the shuttle is checked fully to the end of the pick. If this is done correctly, protector daggers should clear the knock-off blocks by at least ½ in. At times loomfixers will add tension on binders to check shuttles, instead of working on check straps and pull-back springs on picker sticks. When setting protector rods, see to it that daggers are snugly set in knock-off slots and that fingers fit snugly against binders when the shuttle is out of box. (*R*-82)

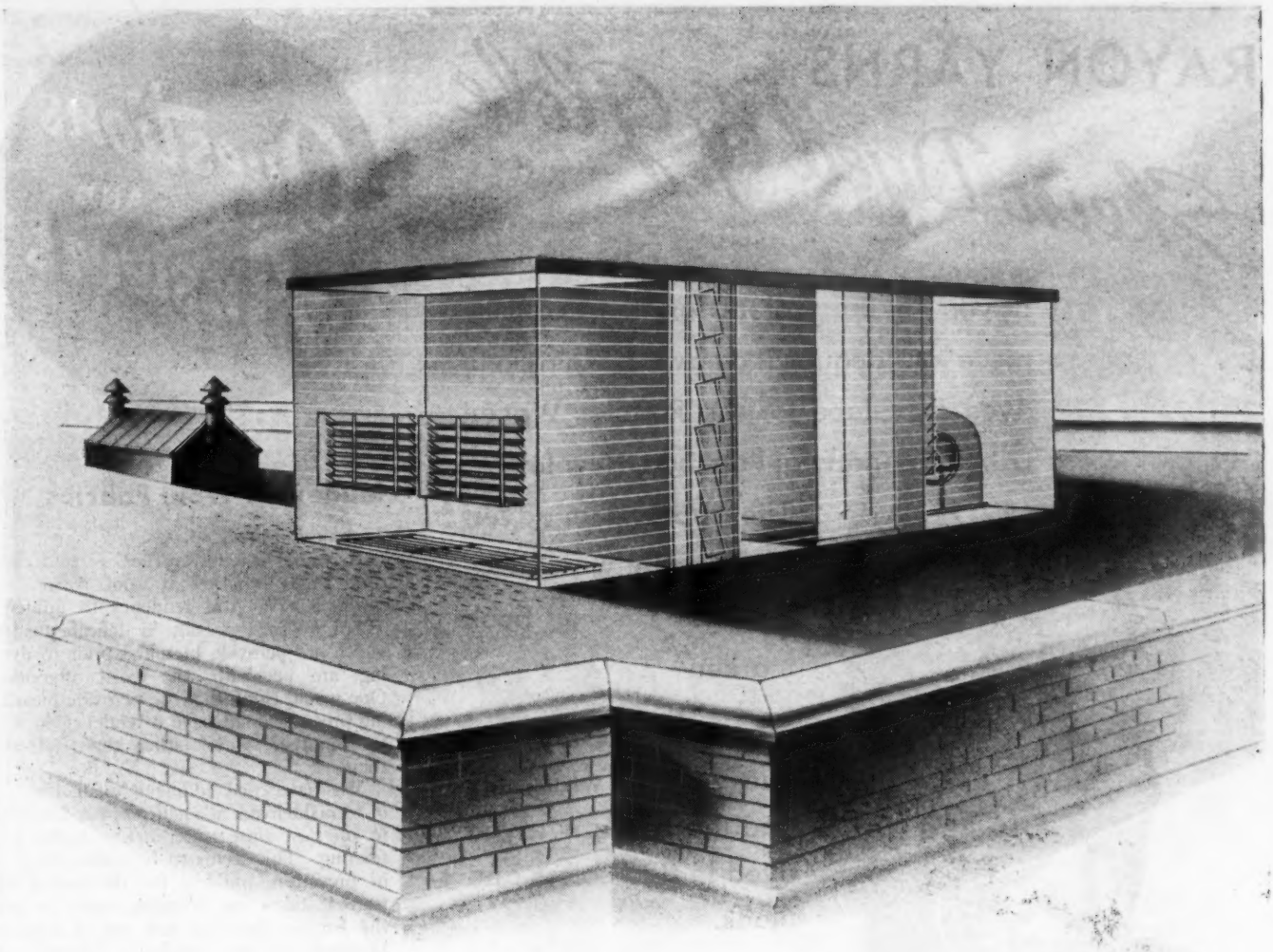
Comment From Mill Men

This is just a note to say that for the past few months TEXTILE WORLD is doing a very good job by furnishing the textile industry with good articles containing worlds of useful information for the mill superintendent and overseer. We have been getting a lot of good ideas from the articles, and we sincerely hope that your staff will continue to publish this type of information.

I have talked to quite a few mill men recently about this same matter and they agree with me, that TEXTILE WORLD has improved greatly. (*R*-83)

Cotton, Rayon Transposed

As the result of a printer's error in the tire-cord survey published in the September issue of TEXTILE WORLD, Table V on page 111 shows an apparent actual superiority of cotton to rayon, whereas the opposite is true. The side headings "COTTON" and "RAYON" should have been in the reverse order.



Plenty of room up there, *but* will the roof stand the weight?

Ducts, dust collectors, humidifiers, fans and motors—add air conditioning as a means of meeting postwar competition, and you need them all. The roof is a fine spot for such equipment. It's out of the way, easy to get at for servicing, but there's this question—

Will the roof stand the burden of heavy equipment?

Lightweight aluminum will help meet that objection. Use it generously and reduce the loads roof trusses have to carry. Aluminum ducts distributing conditioned air throughout your plant place less burden on their supports. The lightness of aluminum makes handling and erection easier.

The corrosion-resisting ability of aluminum lengthens the life of all this equipment. Less attention for maintenance is required. Where humidities are high, there is no rusting to cause staining from condensation and dripping.

Manufacturers of air conditioning equipment have had a wealth of experience in working with aluminum both before and during the war. Its use introduces no unusual fabricating problems. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALCOA ALUMINUM REG. U. S. PAT. OFF. **ALUMINUM**

RAYON YARNS *Skein Dyed by Globe*

Rayon in flag colors for this exquisite piece of Jacquard weaving was skein dyed by Globe for the Premier Woven Label Company of Paterson, New Jersey. The ribbon is an advertising novelty, suitable for use as a book marker.

Construction

The warp is white silk and the filling is rayon dyed in flag colors and black.

552 ends to 2 inches +

We are dyers, bleachers and mercerizers of Cotton Skein Yarns and Warps.

Dyers of rayon, spun rayon, nylon, Aralac and novelty yarns.

Package Dyeing on Tubes

Globe DYE WORKS CO.

FRANKFORD, PHILADELPHIA 24, PA.

Questions AND Answers

Mildew in Wool Fabrics

Technical Editor:

In warm, humid weather we find that dyed goods, whether of wool, cotton, or rayon, have a great tendency to mildew. Wool stocks, especially in delicate shades which are peroxide bleached prior to dyeing, are peculiarly the worst offenders. One would think that the peroxide bleaching process would have a tendency to kill the mildew spores rather than activate them.

We have tried adding a small amount of formaldehyde, one-half pint per 100 gal. to our last rinse water before hydro extracting. This seems to be quite effective in preventing mildew for the period of time it takes our boarding room to get the batches dried up and out of danger. However, we are wondering whether or not this small amount of formaldehyde left in the goods will have any effect on the fibers in storage or whether there is the slightest chance of injurious results to the skin of the wearer.

We know, of course, that a very large amount of goods are treated with formaldehyde after dyeing to enhance the fastness to washing, but we have always rinsed off after such treatment. It would be of interest to know how the mills in the southern states get around this difficulty of mildew.

There are specialties being sold as preventatives of mildew, especially for fabrics for the armed forces. We believe that most of these are expensive and that they depend on deposition of copper or copper salts on the fiber. The objection we have to copper compounds is that we have found great difficulty redyeing goods so treated. We will be very interested to receive any advice you can obtain for us. (9007)

We gather from your letter that wool seems to be the chief offender, and that you have less trouble with cotton and rayon.

Formaldehyde is an effective mildew inhibitor, and we think that in the quantity you are using it, there is little danger of your getting into trouble. However, there is a slight possibility that under certain time and temperature conditions the formaldehyde would react with the wool pro-

POWELL VALVES

. . . for the duration . . . . . AND AFTER!

Powell Valves, now functioning flawlessly in every branch of War Industry, are good not only "for the duration" but for the durations of the coming cycles of peacetime production. Resultantly, Powell Valve buyers need face no scrapped installations when reconversion comes, whether it come by degrees or all at once.

The basic principle of efficient flow control is, at all times, the *right valve*, in the *right spot*, for the *right job*. It is on this principle that the complete POWELL Line of industrial valves of all types and materials has been developed through nearly a century of successful valve manufacture.

The valves shown here are especially adapted for controlling flow in liquid process lines. The complete POWELL Line includes valves of all types for handling water, air, gas and steam.

The Wm. Powell Co.

Dependable Valves Since 1846

Cincinnati 22, Ohio

Fig. 2309 — A 4-inch, Stainless Steel Flush Bottom Tank Valve for 150-pounds W.P. Powell Flush Bottom Tank Valves are specially designed to drain metal tanks (with or without steam jackets), glass or vitreous lined tanks and autoclaves. An especially desirable feature is that the valve proper is one complete unit that can be readily removed from tank for inspection or regrinding, if necessary.

Fig. 1969—Stainless Steel, Flanged End Gate Valve for 150-pounds W.P. Has outside screw rising stem threaded through bronze yoke bushing, bolted yoke and taper wedge solid disc. Sizes, ¼" to 2", inclusive. Also available with screwed ends.

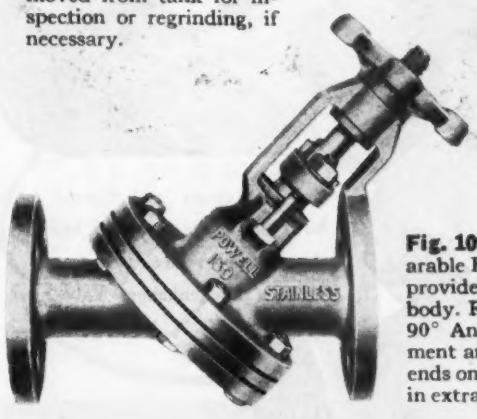


Fig. 1097—A 150-pound Stainless Steel, Separable Body, Reversible Seat, "Y" Valve that provides straightway flow area through the body. Reversible seat permits easy change to 90° Angle Valve for special piping arrangement and to eliminate extra fittings. Flanged ends only. Sizes, ½" to 4", incl. Also available in extra heavy pattern for 300 W.P. Fig. 1095.

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You can see the Quality in every line of a LUNKENHEIMER VALVE

From handwheel to pipe threads a Lunkenheimer Valve reflects exceptional strength and ruggedness. Ample proportions and perfect balance of all parts are basic design features that give assurance of the good service and long life so characteristic of Lunkenheimer Valves.

Maintenance men have long since come to depend upon Lunkenheimer for the best in valve service . . . knowing they will get the highest degree of performance with the least amount of trouble and maintenance expense.

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Lunkenheimer distributors are located in all industrial centers. Use the facilities of the one nearest you for service on your requirements.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI 14, OHIO, U. S. A.
NEW YORK 13 CHICAGO 6
BOSTON 10 PHILADELPHIA 7
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK 13, N. Y.
Only experience and "know-how" can make a casting like this; and only such a casting can make a Lunkenheimer Valve.
LUNKENHEIMER
N-M-D
SIMPLICITY OF DESIGN MEANS EASIER MAINTENANCE

ducing an amino-formaldehyde resin, though with the quantity of formaldehyde you are using, there would be but the slightest chance of this. Being reasonably volatile, this chemical would be present, if at all, in such minute quantities that we do not think it would be irritating to one wearing the finished fabric.

We have consulted with several textile mills in the South, and they state that the problem of mildew is not common with them. The best answer to this problem is to dry up the goods before the mildew-forming spores have a chance to attack the fiber.

There are a series of phenolic compounds, which are water-soluble, do not discolor the fabric, and are readily removed so that fabrics thus treated can be easily re-dyed. These have met with favor, since they are quite inexpensive in the quantity necessary for inhibiting mildew. Their ease of application also recommends them. While we believe your treatment with formaldehyde is safe, it might pay you to investigate these phenolic derivatives.

Concrete Floors for Woolen Textile Mills

Technical Editor:

We are contemplating extensive repairs to our buildings, especially to the floors. Our architect is of the opinion that we should install concrete floors throughout. However, we are not sure this would be a good move. We would, therefore, like to have your advice on the approved type of flooring used in modern, woolen textile-factory construction.

We have a hardwood flooring on a type of standard construction joists on concrete mats in use at present in all departments, that is, in carding, in spinning, and in the weave sheds. These have been found to be satisfactory with the exception that there has been some rotting of the joists. We have been advised that we will get away from this by using concrete floors, and also that vibration and constant machinery breakage will be reduced. We would appreciate any advice you could offer or make available to us in this respect. (9004)

The argument as to whether concrete or wooden flooring is better for woolen mills, is rather old. Both types of floorings are extensively used by woolen plants all over the world. Advantages and disadvantages of the two types of flooring are as follows:

In general, concrete flooring is cheaper in maintenance and usually also cheaper in first cost than wooden floors; however, it is much more strenuous for the operator. A wooden

CHEMISTS

If you are the man in your company who chooses water repellents, then you are the man to whom we would like to talk.

You are, we are certain, well informed as to the merits and demerits of different water repelling preparations, and you can choose one that will give good repellency as well as we.

But, no doubt, you also discovered long ago that it is one thing to apply a good repellent, and another thing to sell it. That is why we suggest your consideration of "Cravenette" water repellents. They cost no more to apply than any other water repelling preparation, but there is this difference—the "Cravenette" tag, label, and stamp have been the hallmark of quality in repellency with the American public for more than 50 years in the best of garments in the best of stores.

In respect to salability it definitely offers a plus.

Of course it will meet your technical requirements, too. Our "Cravenette" CBC imparts water repellency to wool, cotton or blended fabrics, and may be applied either from a washer or a standing bath; it is odorless and does not perceptibly affect the feel, finish or looks of the fabric. As you would expect, it also is stable under variable conditions and a wide range of temperature, is accurately compounded and liquid at high and low temperatures.

However, you can easily satisfy yourself on these points by asking for a sample, which we will be glad to send. But looking to the future, salability is an ingredient which you particularly will wish to keep in mind. On that score "Cravenette" water repellents offer you an advan tage which is distinctly individual.

Your fabric treated with

REG. U.S. PAT. OFF.

CRAVENETTE

water repelling preparations

SHEDS SHOWERS

"CRAVENETTE" is a trademark of The Cravenette Company, U. S. A., manufacturers and sellers of water repelling preparations. The Cravenette Company, U. S. A., and its licensed agents, apply these preparations to fabrics and garments.

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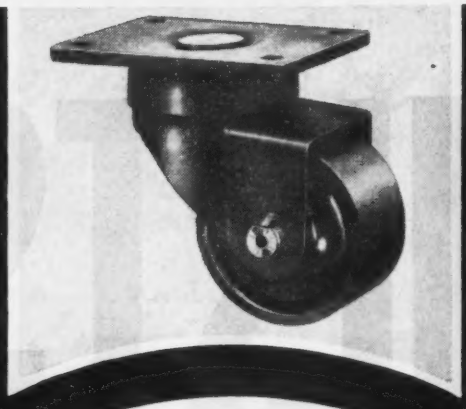
CHEMICAL DIVISION
8th and Madison Streets, Hoboken, N. J.



Keep Ahead with

DARNELL CASTERS

For light or heavy duty service Darnell Casters and Wheels are made for a long life of trouble-free usage, to protect floors and increase employee efficiency.

A SAVING AT EVERY TURN

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LONG BEACH 4, CALIFORNIA
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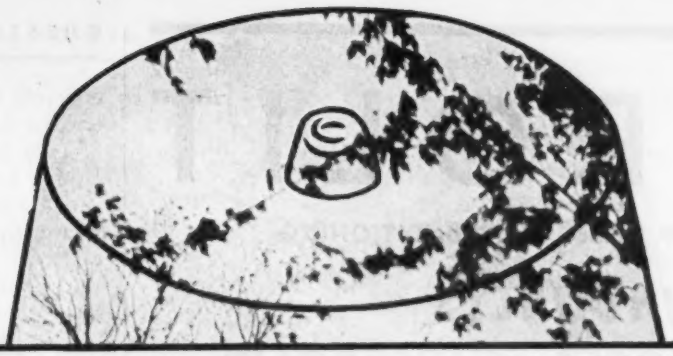
floor is much softer and not so tiresome for the workman who has to walk many miles every day on this type of floor. On the other hand, the stone floor is not "footwarm" and the workmen suffer in the winter from this disadvantage.

A good concrete floor does not require attention for years, especially if impregnated with material to make it oil resisting. This is a rather important factor because mineral oil corrodes the concrete easily if special care is not taken.

Wooden floors, consisting of small oak or ash or hickory wood, and in some parts of the country this wood is not too expensive, may give good service for many years. Spruce and softer woods are also used; however, the maintenance for such floors is somewhat higher. Joists, if made from the same material or from a material of not too low quality, will withstand much wear, provided the joists are properly supported and free of moisture and dampness. It is advisable to fill-up the spaces between the joists (preferable 2½ to 3 in.) with a very dry ash or gravel. Earth or fine sand is not advisable. The boards have to be rather narrow, not over 4 in., to provide a dust-free flooring with no visible joints. I often successfully filled up the joints with asphalt, and it proved to be very good. Still better, place the whole flooring in asphalt; this means having a layer of asphalt under the floor. This method, however, is only applicable when small, hard boards are laid directly on the concrete slab. This type of floor is one of the best which I have used, although somewhat expensive.

A hard asphalt floor is also very good. It is nearly as elastic as a wooden floor; however, it does not look as nice, but it does not require as much maintenance as a wooden floor. It is nearly as footwarm as wood.

As to the vibration and machinery breakage problem, in respect to flooring, this question can only arise in the weaving shed. Concrete floor for a weaving shed may be the cheapest but not the best solution. If the location of the looms has not been decided, a hard asphalt floor or wooden floor consisting of small, hard board of 2 x 6 to 8 in. laid in asphalt, is certainly one of the best types of floors. The looms can be easily attached to the concrete with long bolts. A layer of felt under the legs of the looms will further reduce the shock. If a wooden floor with joists is in existence at present, it may also be possible to have small concrete bases installed so that the loom stands not on the wooden floor but on the



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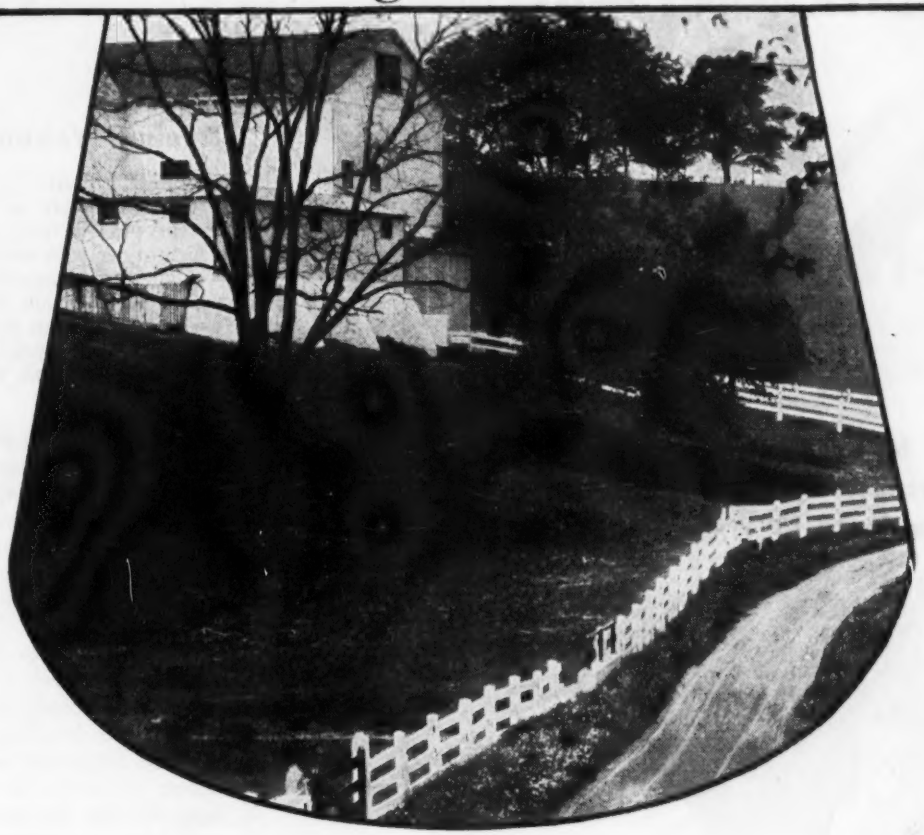

Technical developments in the manufacture of Aberfoyle Yarns and war-gained experience in their application point to the fact that these are truly "*the Fibres for the Fabrics of the Future*"... the post war era. For style... for serviceability of the finished product... make it with Aberfoyle Durene.

Made of Durene® multi-ply mercerized cotton
4 WAYS BETTER than ordinary cottons
EXTRA COMFORT ...more absorbent
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Representatives in principal textile centers of the world

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ORIGINATORS OF CHEMICAL CONDITIONING

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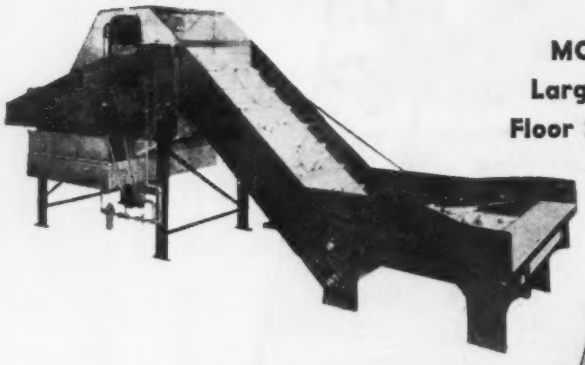
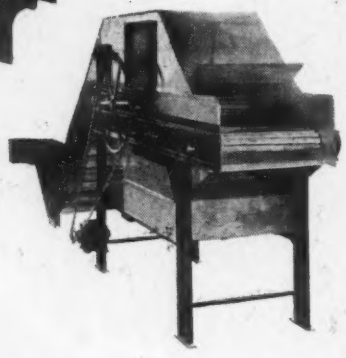
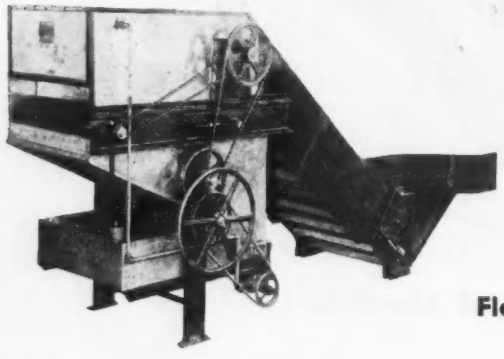
3 NEW MODELS of HYGROLIT CONDITIONING MACHINES



MODEL 4 AY
Large Capacity
Floor Space 17 x 5'



MODEL 11 AY
Standard Capacity
Floor Space 13' x 4½'



MODEL 14 AY
Limited Capacity
Floor Space 9½' x 3½'

For details, ask our representatives

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Mexico, D. F., Mexico.

concrete slab. However, this solution has the disadvantage that the position of each loom is fixed by these bases. If, for some reason, a concrete floor should be used, the place for the weaver should be filled with a wooden platform. This later solution is not too good, especially if the operator has to look after more than 2 looms.

The problem of vibration does not exist in the spinning and carding department. A wooden floor, with or without joists, or a hard asphalt, is preferable for such departments.

Dyeing Webbing

Technical Editor:

Can you supply us with information as to the piece-method or equipment with which to dye with developed colors, 1¼-in. webbing? We receive this webbing in white, and on spools of about 50 yd. We dye it here, but our method is pretty "old fashioned" and if you can give us an idea, an approved method, we would appreciate it. (9006)

As far as we can ascertain, there has been little development in this field in either new methods or equipment. One of the most successful dyers of webbing, on government contracts, uses hand-tubs for tightly woven webbing going into gun straps and clothing belts.

Webbings up to $\frac{3}{16}$-in. in thickness, dyed with direct colors, have been processed successfully, with good penetration and leveling. Webbing over $\frac{3}{16}$-in. is commonly yarn or stock-dyed before weaving. In order to dye webbing of this thickness, it should be well scoured, especially if the yarns are of high twist, so as to obtain the greatest possible absorbency. The use of a penetrating or wetting agent in the dye-bath will also prove beneficial in obtaining penetration of the color.

You speak of your method being "old fashioned" and by that I presume you mean you are using hand-tubs. While this is, of course, an old method of dyeing webbing, it is still one of the most successful.

You also state you are using developed colors. While these, for certain shades, especially in deep tones, possess better fastness to washing than the direct colors, in general they have poor fastness to light. In light and medium shades, if the direct colors are carefully selected, such shades may be made that possess reasonably good wash-fastness and far better light fastness than the developed colors. Their use also cuts down the long and tedious diazotizing and development treat-

This ain't no "Ferdinand"!

There is a place where possibilities are virtually unlimited for the development of new and relocated textile mills. That place is Norfolk and Western territory—a vast, productive area extending from the Midwest to the Atlantic seacoast, and midway between the North and the South.

Here, you will find an abundance of raw materials. Your plant will be near the nation's great markets, and not many hours from the Port of Norfolk, Va.—an ice-free port that serves the markets of the world. Fast, flexible transportation, over the Norfolk and Western Railway, expedites the assembling of raw materials, and the distribution of finished products. Here, you will find vast reserves of all-purpose bituminous coal and ample power; many rivers of clear water that is essential to various processes; a tax policy that is friendly to industry. For employment, you will find intelligent, native-born labor, both skilled and unskilled. Living conditions are excellent in a climate without extremes.

Before completing your plans for your postwar plant, consider carefully the territory served by the Norfolk and Western Railway.

For detailed information about Norfolk and Western territory write: Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke 17, Virginia.

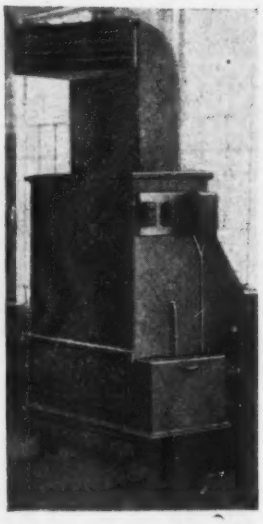
Norfolk and Western Railway

FOR BETTER PLANT LOCATIONS

IMPROVE PRODUCTION WITH AIR-PERME-ATOR

("DRY" Humidification.)

"DRY" Humidification, because no free moisture is discharged into the room. The desired amount of humidity is *made inside the machine* by use of the principle of molecular suspension.



Used by many leading rayon, nylon, cotton, and woolen mills; in weave sheds, warping departments, and spinning rooms.

In Weave Sheds it makes possible quick starting on Mondays. Prevents smashes and many seconds. Reduces loom fixing. Prevents expansion and contraction of shuttles and sloughing off of quills.

In Jacquard Weaving, prevents lowering and raising of harness.

In warping, eliminates static and loose and tight ends.

Saves *Fuel* during the heating season.
Cools the *Air* in summer by evaporation.
Low *First* Cost and Maintenance Cost. Easily installed.

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REMINDER

If you are converting to something different, don't forget that *lighter weight travelers* are required for

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NEW RINGS — LARGER RINGS
MORE SPEED — MOIST, STICKY WEATHER

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STERLING RING TRAVELER CO.
FALL RIVER, MASS.

ment. Any of the leading dyestuff manufacturers will be glad to give advice on particular shades and recommend combinations and methods.

Woolen Fabric Design

Technical Editor:

Will you please send us a diagram for the pattern chain on a Gem-Head loom to weave a flannel the same as the sample submitted. Please send diagram for a pattern chain for an all-wool blanket weave to make the most lofty nap possible. (9002)

The fabrics, Nos. 1 & 2, have the same weave and are a 3-harness twill. The chain can be drafted on 2, 6, 9, 12, 15, 18, 21, or 24 harness, depending on the harnesses required for this construction. We would assume it to be at least 6 harnesses. If more are used the weave shown in Fig. 1 can be extended.

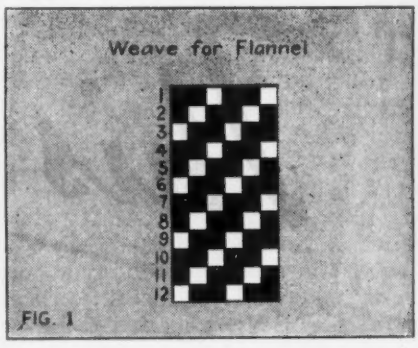


Fig. 1. Suggested weave for flannel cloth.

The blanket weave that should be used to obtain the loftiest nap must be of an open warp construction and have as much filling showing on the back as on the face. The 2-up, 2-down, straight or broken twill weave, Fig. 2, may be used. For a 76-in. blanket, a 90-in. reed spread should be used. About 15% shrinkage should be expected.

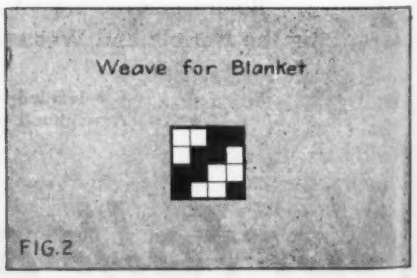
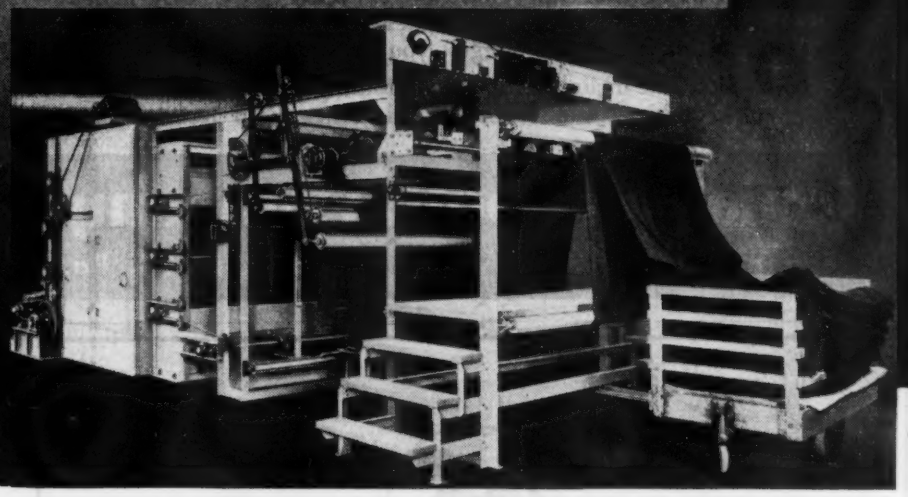


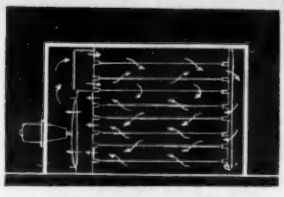
Fig. 2. Suggested weave for producing a lofty blanket.

Speed drying and improve quality with the

PROCTOR

High Speed TENTER DRYER





Arrows indicate how air is forced through the cloth rather than blown across the surface. The machine is so designed, however, that any portion of the circulating air can be blown over, through or across the goods depending upon the character of the cloth being dried. The degree of relative humidity within the dryer is maintained at the most economical and favorable point, by correct proportioning of moisture-laden air discharged and fresh air taken in.

More thorough drying of woolen and worsted cloth is accomplished in much less time by having warm air forced through the cloth, rather than blown across the surface of the cloth. Every fiber comes into contact with live, heated air. Rapid evaporation throughout the entire thickness of the fabric keeps temperatures down, prevents surface baking and permits high initial atmospheric temperatures without the danger of high cloth temperatures. A variable speed transmission on the conveyor makes it possible to instantly regulate the speed at which the cloth travels through the drying chambers. Refinements in design include a motor-driven selvage opener and push down wheels at the feed end of the machine to properly set cloth on conveyor pins. A chain equalizing device virtually eliminates unequal wear on chains. All electrical controls are mounted on a platform, readily accessible to the operator. All around ruggedness of construction prevents distortion of the housing or misalignment of running parts. Maintenance costs are kept to a minimum. Unit construction permits building a machine individually suited to the needs of any given plant or the addition of units when necessary.

If the drying of cloth which must be held to width during the drying operation is your problem, it will pay you to discuss your individual requirements with one of our representatives.

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Quality Card Clothing
Aids Your Cost Record

By developing the full efficiency of your cards, BOOTH QUALITY CARD CLOTHING makes a definite SAVING in your production costs. We suggest you try it.

A complete line including Cylinder Clothing, Doffers, Workers, Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

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BOOSTING EMPLOYEES' Morale

Critical Manpower Need in Tire-Cord Mills

Nineteen thousand workers are needed in 21 critical war plants in the Southeast, and War Manpower Commission offices have been ordered to "man these plants regardless of all other labor needs."

Nineteen of the plants, Regional WMC Director Dillard B. Lasseter said, are tire-cord and duck mills in Georgia; Alabama, and South Carolina, and the other two are ship-building firms.

The demand in cord and duck mills is greatest, he added, at Thomaston, La Grange, Cartersville, Columbus,

THE NATIONAL WAR FUND, for which an appeal for support is now current, includes over 21 welfare organizations operating in 91 countries with 4,000,000 volunteer workers in the United States alone. In addition to the agencies like USO which bring direct services to our own fighting men, relief agencies are included in the War Fund which supply clothing and other necessities to the needy populations in war-torn countries. Some used clothing is distributed, and some piece goods bought and made into garments. Above is shown Mrs. Jean Pierre Millan, wife of the president of the French Veterans Society, cutting garments to be sent to French children.

UNBRAKO

Reg. U. S. Pat. Off.

SELF-LOCKING HOLLOW SET SCREWS NEVER LET YOU DOWN

"UNBRAKO" SELF-LOCKING HOLLOW SET SCREWS simply CAN'T unwind due to vibration.

In Textile Mills, there are many places where "UNBRAKO" Self-Locking Hollow Set Screws can provide full assurance of relief from breakdowns caused by loosening of ordinary set screws.

The knurled points on the "UNBRAKO" SELF-LOCKERS dig in and hold tenaciously in spite of the most severe vibration.

But they can be removed with a wrench, same as ordinary socket set screws; and can be used over and over again.

•

Give your looms and other machinery the sure protection which "UNBRAKO" SELF-LOCKING, HOLLOW SET SCREWS provide.

Send for the "UNBRAKO" Socket Screw Catalog. It's full of worth while information

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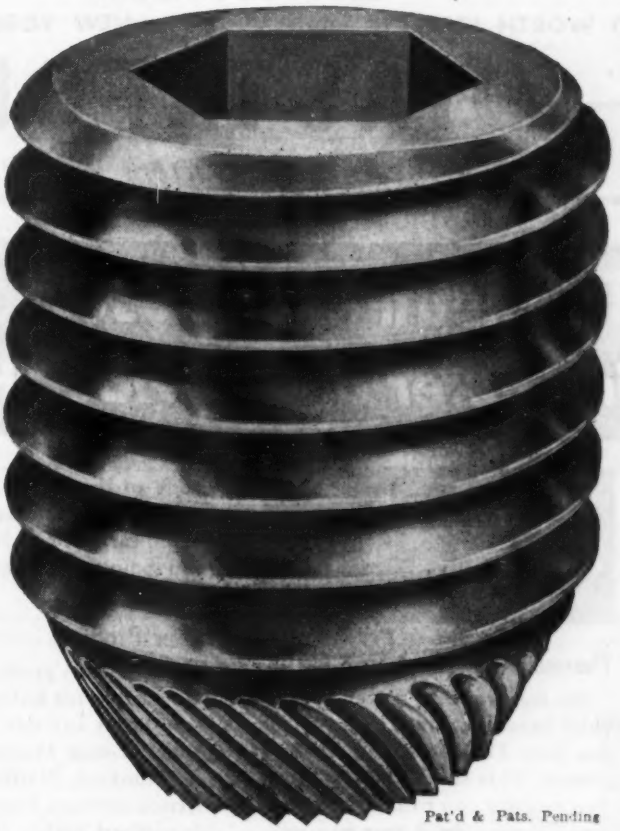

Pat'd & Pats. Pending

"UNBRAKO" Self-Locking, Hollow Set Screw with the knurled point that digs in and holds it tight despite severe vibration. Sizes No. 4 to 1½" diameter. Full range of lengths.

"UNBRAKO" WELT-BAR SCREWS

It's the hex socket in the "UNBRAKO" Welt Bar Screw which makes the difference because it permits the snugly fitting hex bar-wrench to exert a far greater torque than is possible with an ordinary screw driver. Besides, the "UNBRAKO" Socket stands up almost indefinitely.

KNURLING OF SOCKET SCREWS ORIGINATED WITH "UNBRAKO" YEARS AGO.

OVER 40 YEARS IN BUSINESS

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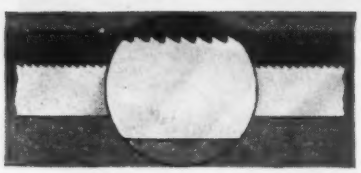
36 Years of Satisfactory Results

To Clean and Reseat Slots *in Sinker and Divider Heads*



Thomas & Skinner Slot Cutter

No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

Other Products

Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

Reconditioning Service

We restore worn cams, gears, rollers, and many other textile machine parts to their original size and shape. Satisfaction guaranteed.

Thomas & Skinner Steel Products Co.

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and Macon, Ga. Other mills less seriously in need were listed at Cedartown, Rockmart, Hogansville, Porterdale, and Barnesville, Ga.; Montgomery and Decatur, Ala., and Winnsboro, S. C.

Bigelow-Sanford's Foremen Meet

The opening fall meeting of Bigelow-Sanford Foremen's Forum was held Sept. 13 in Amsterdam, N. Y. Charlie Cooper reported for Chairman Roy DeLaMater of the bowling committee. Robert Peters reported as chairman of the golf committee. Stanley McBride, chairman of the softball committee, presented the Forum trophy, symbolic of the league championship, to the Machine Shop team. Manager Cecil Holland accepted it in behalf of his players. Joseph Jackman is president of the Forum. A succeeding meeting was held Oct. 3.

Personnel Directors' Association Reelects

The National Association of Personnel Directors has elected Thomas O. Armstrong for a second term as president of the association. Mr. Armstrong is manager of Industrial Relations at the Electric Appliance Division plant of the Westinghouse Electric & Mfg. Co., East Springfield, Mass.

The objectives of this association are to secure full cooperation of all agencies of the government, industry, labor and agriculture in personnel work; to create a medium among members for exchange of ideas and methods; and to serve personnel directors as a clearing house for information covering current events in the field of business, industry, labor, and government.

Urges Effective Rehabilitation of Soldiers

"By the time this war ends, more than one-tenth of this country's population will have served in the armed forces. If we at home do not make adequate plans and provisions *now* for returning them easily to civilian life, we may one day find ourselves with millions of frustrated or embittered men and women in our midst."

This is the warning voiced by Louis L. Bennett, Director of the New York City Veterans' Service Center, in an article on the "Problems of Homecoming," in the *Survey Mid-Monthly* recently.

Responsibility for the orderly and

Keep Dye and Fabric Quality Up with Hooker Chemicals

During World War I, there may have been some reason for the public to complain about color fading, and about fast dyes that *weren't* fast. At that time American dye manufacture was still an infant industry. With the advances that American dye and textile chemists have made since that time there is no reason for any quality deterioration in dyes or fabrics even during the war.

There is one way of making sure that your products will be up to pre-war standards. Use Hooker chemicals. Because of war's demands, you may not be able to get all the Hooker chemicals you need when you want them. However, the Hooker chemicals that are available are of the same uniform dependable high quality that has made Hooker the source of discriminating buyers.

Many of your needed chemicals are still available in reasonable quantities and for prompt shipment. Some of the commonly used Hooker chemicals in the dye and textile industry are listed below. Other Hooker chemicals are listed in Bulletin 100, Hooker General Products List. Send for a copy.

PRODUCT Chemical Formula • Molecular Weight	DESCRIPTION	USES
Aluminum Chloride, Anhydrous $AlCl_3$; 133.3	Gray crystalline solid.	Catalyst; dye making.
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Yellowish solid.	Catalyst, dye making; mordant in textile printing; moisture and fire-proofing textiles.
Benzoyl Chloride (Benzenecarbonyl Chloride) C_6H_5COCl; 140.5	Water clear liquid, soluble in ether, reacts with alcohol and water.	Highly active source of benzoyl group. Manufacture of benzophenone, benzyl benzoates, dyes and pharmaceuticals.
Cyclohexanol (Hexahydro Phenol) $C_6H_{11}OH$; 100.1	Clear, colorless liquid.	Solvent.
Lauryl Pyridinium Chloride $C_5H_5NC_{12}H_{25}Cl$; 293.4	Yellow gray semi-solid.	Cationic detergent.
Metanitrobenzoyl Chloride $C_6H_4NO_2COCl$; 185.5	Yellow to brownish liquid, partially crystallized.	Manufacture of dyes.
Monochlortoluene $C_6H_4Cl\text{-}CH_3$; 126.5	Clear, colorless liquid.	Solvent, dye intermediate.
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, odorless liquid.	Solvent, dye intermediate.
Paranitrobenzoyl Chloride $C_6H_4NO_2COCl$; 185.5	Yellow crystalline lump material.	Manufacture of dyes.
Sodium Tetrasulfide Na_2S_4; 174.23	Aqueous solution containing 40% by weight of compound. Dark red liquid.	Manufacture of sulfur dyes.
Sulfuryl Chloride SO_2Cl_2; 135.0	Light yellow liquid.	Chlorinating agent. Forms chlorides and anhydrides of organic acids.
Thionyl Chloride Refined and Technical $SOCl_2$; 119	Colorless to yellow or pale red liquid.	Chlorinating agent. Forms organic acid chlorides.

CAUSTIC SODA — LIQUID CHLORINE

MURIATIC ACID — PARADICHLORBENZENE

SODIUM SULFHYDRATE — SODIUM SULFIDE

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Tank Builders for over 80 Years

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Established 1854
NEWNAN, GEORGIA

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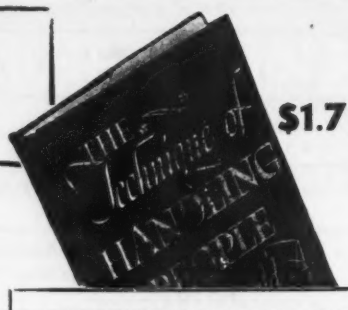

$1.75

Do you know how easy it is to exercise the qualities that impress people favorably, that lead them instinctively to give that extra ounce of loyalty, cooperation, and effort to your ideas and orders?

To win the rewards that beckon to leadership today, in all walks of life, you *must work with people*—get them to like you—get over your ideas to them—influence their thoughts and actions. And now a plain method of developing this ability—11 simple rules that successful business leaders follow—things that *you can start doing today, without study or practice*—are given in this new book.

THE TECHNIQUE OF HANDLING PEOPLE

By DONALD A. LAIRD
and ELEANOR C. LAIRD

Read what—

EUGENE G. GRACE, who became president of Bethlehem Steel at thirty-seven, says about observation;

WALTER A. GIFFORD, who became president of A. T. & T. at forty, says about listening to opinions;

CHARLES E. WILSON, self-made president of General Electric, says about wanting to get ahead;

WALTER D. FULLER, who advanced from selling copies of the *Saturday Evening Post* to presidency of the Curtis Publishing Co., says about Big Ideas to get ahead;

LOUIS RUTHENBURG, who became president of Servel at forty-six, says about the spirit of work.

The observations of these and many other important men of industry lend concrete evidence to back up the soundness of Dr. Laird's book. The book gives seasoned, practical advice on the technique of handling people and shows in quickly understandable fashion how to use the psychology of leadership.

How to understand and work with others

This readable, practical manual presents 11 pointers on what to do and say in your everyday contacts with others, in order to win their friendship, good-will, and cooperation. The methods are clearly demonstrated in numerous stories of real people, outstanding leaders, of today, and together form a direct, easy-to-understand, easy-to-use technique for improving your relations with others and especially for securing better results in training, directing, supervising, and other elements of successful leadership.

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Send me Laird's The Technique of Handling People for 10 days' examination on approval. In 10 days I will send $1.75, plus few cents postage, or return book postpaid. (Postage paid on cash orders.)

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BOOSTING MORALE

successful return of veterans to civilian life will rest upon the armed services, governmental agencies and every local community, Mr. Bennett declares. In addition to suggesting what the armed forces can do for the veteran before discharge, Mr. Bennett offers a program for handling the veteran problem.

New L-M Committees

Among recently established Labor-Management Committees are the following:

Fort Schuyler Knitting Co., Utica, N. Y.

Continental Diamond Fibre Co., Valparaiso, Ind.

Paramount Textile Machinery Co., Kankakee, Ill.

Mill Band Gives Community Concerts

The American Woolen Co. Band is providing weekly municipal concerts which are attracting hundreds of music-lovers to Henry Law Park in Dover, N. H.

Labor Union Builds Mill Village

The Front Royal CIO Local 371, Textile Workers' Union of America, has exercised its option on 57 acres comprising the McKay Dairy Farm, on which it intends to build a village of permanent, modern workers' homes. Members, who are employees of the American Viscose Corp., located in Front Royal, Va., will live in the houses to be built under contract with union labor.

As soon as a survey of lots and streets has been made, construction of 50 houses to sell at about $4,000 each will begin. The houses will be of masonry, with six rooms, bath and cellar. The streets will have concrete sidewalks and curbs, and residents will have city water. Sewerage and electric current will be charged against the sale-price of the house itself.

"Health for Victory" Program by Westinghouse

The "Year 'Round Planning Guide" of 104 pages will spearhead the new phase of the Westinghouse Electric Appliance Division's "Health for Victory" nutrition program, now used in 1700 war plants and other organizations. The new meal-planning course was inaugurated Sept. 1.

BUNA COMPOUNDS

for IMPREGNATING, COMBINING and COATING

(Curing and non-curing stocks)

Longtime specialists in the fields of Combining, Coating, and Impregnating Compounds, the UBS Laboratories are ideally set up to develop the particular Buna Compounds your operations require. *Write today, describing your Impregnating, Combining and Coating Problems.*

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Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

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News of the month

No Dismantling of Mills. WPB has barred the dismantling of textile mills making needed fabrics without specific consent from WPB. That agency states that such consent is not given for plants of Alabama Mills in Jasper, Haleyville, and Russellville, Ala., but that instead these three plants must produce 3,000,000 yds. of goods in the next three months.

CTI to Meet Nov. 17. The Cotton-Textile Institute will hold its annual meeting on Nov. 17 at Waldorf-Astoria Hotel, New York. There will be a general session in the morning, a luncheon, and panel sessions in the afternoon.

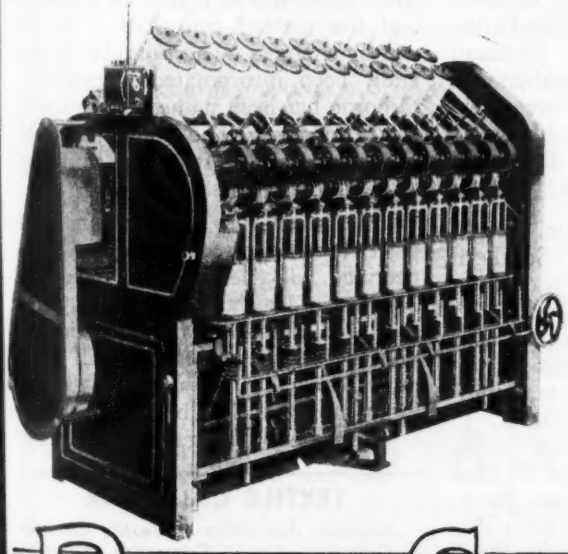
Cotton Products Rise Pinches Users. The increased cost of cotton yarns and gray goods under the provisions of the Bankhead Amendment is already having serious repercussions among converters and in the knitted outerwear industry. As things now stand, these merchants are required to absorb this additional production cost. This, they state, they cannot do. Knitters have urgently requested that OPA give immediate consideration to the issuance of an order granting appropriate relief on yarn cost. Converters are urging a plan whereby they will absorb 10% of the higher gray goods cost, garment manufacturers 40% and retailers 50%. In the two latter fields this share is a very small percentage based on garment price.

Japs Turn to Ramie. A Japanese-sponsored broadcast from Macassar, on the island of Celebes, recently announced the harvesting of the first crop of ramie, with which the authorities have been experimenting in the Netherlands East Indies to replace the dwindling supplies of cotton. Not only ramie, but also the leaves of banana and pineapple trees are being converted into material for clothing for the natives, it is said.

Research Institute to Meet. "The Textile Industry-Re-Birth or Second

Now all out to win!

Then -



You will no doubt wish to make alterations, replacements and possibly additions to your plant.

We commenced making Textile Machinery in 1795 and we hope that you will give us the opportunity to offer you our services. We are makers of Combing, Drawing, Spinning and Twisting machinery on the English and Continental systems.

We also make a variety of Twisting Frames for all manner of fibres.

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VICTOR SERVICE ENGINEERS

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Hold Hands in the Spinning Room

With spinning and twisting hands so hard to get, you want to *hold* all you can find, once you get them on the job. Bad spinning, with excessive end breakage and other work-increasing troubles, makes the job look tough, discourages learners, often leads them to quit after a few hours. Even experienced hands are much more likely to stick to the job when spinning runs smoothly.

The Victor Service Engineer can help you put your spinning and twisting in shape to ease the demands on operatives, and also make good production less dependent on the operatives' skill. He can show you short cuts, too, in "tooling up" for new fibers, new mixes and blends.

Thoroughly mill-trained, a man who can "speak your language", the Victor Service Engineer has the anwers to the toughest traveler questions. Write, wire, or phone for *prompt* service.

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Ring Travelers

Childhood?", the subject of an address by Dr. Gustavus J. Esselen at the luncheon of the annual meeting of Textile Research Institute, Inc., at Hotel Roosevelt, New York, Nov. 10, will also be the theme of the meeting as a whole. The morning session under D. Appel and Giles E. Hopkins, will cover: (1) the cotton carding project, (2) warp sizing, (3) radiation drying project. The first afternoon session, under Robert R. West, and Douglas G. Woolf, will feature Dr. A. M. McIsaac, of the Department of Economics of Princeton University, who will present a report on the project of the post-war status of the textile industry. The last session, conducted by Dr. Robert E. Rose, will deal with fundamental research possibilities and opportunities in the post-war textile industry.

Promotes American Fashions. "Fashions of The Times", Third Edition-1944, a fashion show with plot interest and the background of a musical extravaganza, will give eight performances from Oct. 24 to 27, in the Times Hall, New York. The one-billion-dollar fashion industry centered in New York, drawing on the wool, rayon and cotton textile production from the far-flung American industry, will be dramatized in three acts, eight scenes, a two-part prologue, and an epilogue. Fabrics and color will be particularly stressed. Among the textile houses cooperating are Juilliard, Stroock, Forstmann, Bianchini-Ferier, Julius Werk, Onondaga, Foreman Silks. This presentation furthers the same type of cooperation between fabric makers and garment designers which made Paris fashions the major success they were in France.

Piece Goods Postwar. The Reconversion Clinic of the Southern Garment Manufacturers' Association meeting in Memphis, Tenn., last month featured discussion of piece goods for postwar with speakers including Donald B. Tansill, vice-president of Pepperell Mfg. Co.; S. Y. Austin, president of Avondale Mills; John Hughes, of Riverside & Dan River Cotton Mills; William Berry, of Reigel Textile Corp.; John M. Reeves, president of Reeves Brothers, Inc. The latter predicted that postwar customers will demand (1) garments made of fabrics with greater durability; (2) in rainwear, garments featuring a high degree of water-repellency; (3) more comfortable garments made and styled along lines suited to greater freedom of action; (4) garments reflecting a high grade of craftsmanship, with more style and better tailoring; (5) and last, they will want color—color and still more color.

STA Elects. M. Weldon Rogers of Wellford, S. C., was elected president of the STA at annual meeting Oct. 7 at Charlotte, N. C. B. M. Bowen is vice president, and F. O. Lockman Jr., chairman of the board. Speakers at the meeting included Dr. Harold Dewitt Smith, Elliott B. Grover and Dr. R. F. Poole.

Combed Spinners Association Honored. The American Trade Association has named the Southern Combed Yarn Spinners Association, Gastonia, N. C., as winner of honorable mention for outstanding achievement in trade association work in 1943-44. The award was presented for accomplishments in the war period in stimulating cooperative efforts by cotton mill owners and employees so that all requirements of the armed forces for clothing, camouflage netting, and other products supplied by this branch of industry have been met on schedule.

PTI Seeks Funds. The Philadelphia Textile Institute, through the Philadelphia Textile Institute Foundation, will shortly launch a nation-wide drive for $2,000,000. This textile school, now in its 61st year, plans to take the initiative to do its part in making ready for the postwar era. To amplify its textile training, and to build up the school equipment to meet future demands, are the purposes of the fund. More stress will be placed on research, and the present consultation service will be enlarged. The Foundation has lately been incorporated. Russell C. Osborne has been named chairman of the campaign. The foundation officers are at the Institute Building, Broad and Pine Sts.

Power Show. The 16th National Exposition of Power & Mechanical Engineering, will be held in Madison Square Garden, New York, Nov. 27 to Dec. 2. Originally planned to aid war production, the exposition will cater more strongly to the needs of civilian production than had been expected as reconversion has entered the picture.

TEXTILE CALENDAR

American Association of Textile Chemists & Colorists, Annual Convention, Claridge Hotel, Atlantic City, N. J., Oct. 12 and 14.

American Society for Testing Materials, fall meeting, Park-Central Hotel, New York, N. Y., Oct. 18 to 20, 1944.

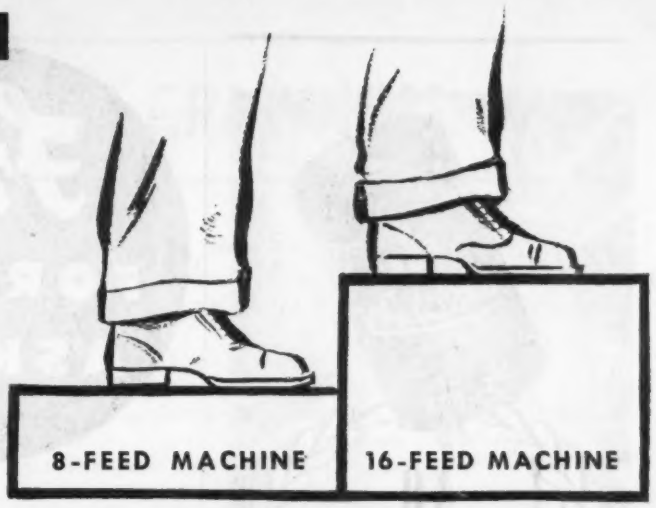
North Carolina Cotton Manufacturers Association, annual meeting, Charlotte, N. C., Nov. 10, 1944.

Texile Research Institute, annual meeting, Hotel Roosevelt, New York, Nov. 10, 1944.

Cotton-Textile Institute, annual meeting, Waldorf-Astoria Hotel, New York, Nov. 17, 1944.

WILDMAN MULTIPLE FEED RIB MACHINE

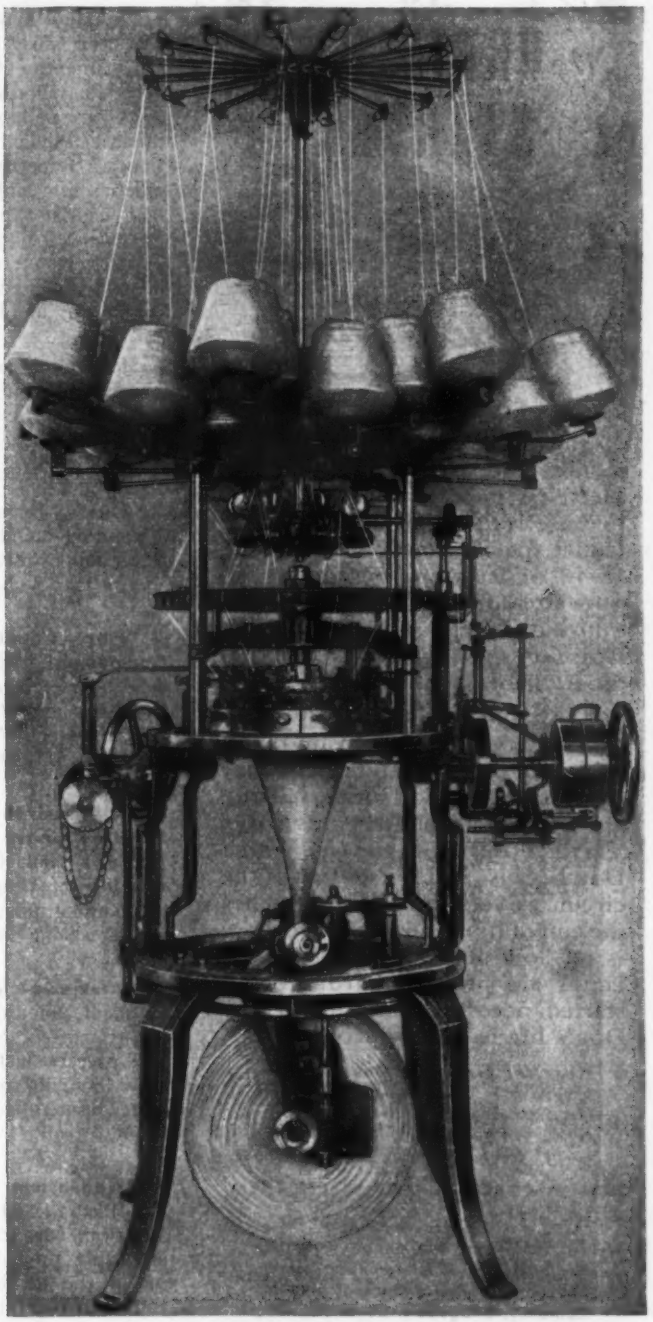
STEPPING UP TO NEW PRODUCTION LEVELS . . . . . .



Measure factory floor space in the modern way, by production—and you will find that an 8-feed knitting machine is a flagrant waste of valuable floor space—a loss of 50% in production. Because with this Wildman 16-feed machine, which occupies exactly the same floor space, you can

Actually DOUBLE PRODUCTION

using only 30% more power. That's why alert knitting mills throughout the country have installed this modern machine, which, in addition, delivers a finer, more uniform product, gives trouble-free performance and offers other operational advantages that you should know about. Write us today.



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Lasts Five Times Longer

One reason why maintenance men are replacing with General Electric's popular Watch Dogs is because of their unusually long life. Under specified test conditions the FS-40 outlasts an average of ten 40-watt lamps, the FS-100 . . . eight 100-watt lamps. The G-E Watch Dog *lasts five times longer* than ordinary fluoressent starters.

Reason For Its Long Life

Ordinary starters wear themselves out prematurely because they continue to make futile starting attempts when a lamp begins to die. This is not so with the G-E Watch Dog because it cuts itself out of the circuit as soon as a lamp reaches the end of its useful life. Since there is no flow of current, burned-out lamps are prevented from being started needlessly and the Watch Dog's life is greatly prolonged.

Hear the General Electric radio programs: "The G-E All Girl Orchestra" Sunday 10 P.M. EWT, NBC. "The World Today" news every weekday 6:45 P.M. CBS.

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For additional information write to Section G1041-109, Appliance and Merchandise Dept., General Electric Company, Bridgeport, Conn.

GENERAL ELECTRIC

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 188. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. Technical Bulletins Nos. 753 and 758 have been issued by Calco Chemical Division, American Cyanamid Co. covering "The Phosphorescence of Textile Fibers and Other Substances," and "Spectrophotometric Prediction of Color of Wool Blends," respectively. The first of these bulletins lists tables covering the effect of light exposure on phosphorescence and fluorescence of undyed fabrics, duration of phosphorescence, color of phosphorescence, etc. for many different types of textile fibers, yarns ,and fabrics.

2. Shrinkage control of woolen and worsted fabrics is discussed in an article entitled, "No Shrink, No Shine, No Slip," appearing in the September issue of *Monsanto Magazine*, published by Monsanto Chemical Co. This article describes a number of new Monsanto compounds intended to improve laundering properties of many textile fabrics used for wearing apparel and also for fabrics about the home.

3. "Fibre Conditioning with Texspray Compound," is the title of a 20-page technical booklet being offered by The Texas Co. This booklet illustrates and describes the oiling of cotton during the opening operations in textile mills.

4. "A Research Service and Training Program for the Textile Industry," is the title of a booklet being offered by Callaway Institute, Inc. This booklet describes the training program and also the research program being conducted by the institute.

5. Automatic cleaning in the roving department, spinning, twisting, and winding departments of textile mills is covered in a 24-page booklet being offered by American Monorail Company. The operation of these cleaners is discussed and their mechanical features illustrated and described.

6. "Magnesium in Textile Industry," is the title of a 41-page booklet offered by American Magnesium Corp. Aside from discussing properties of magnesium—useful in the textile industry—chapters are contained covering its use for looms, warp and section beams, spinning frames, and for knitting machines.

7. Corrosion and contamination of equipment is discussed at great detail in a 16-page catalog on Amercoat plastic coatings, just published by Amercoat Division, American Pipe & Construction Co.

8. The proper care of check straps is covered on a card, series 1B, called "Helpful Suggestions to Mill Men," offered by E. H. Jacobs Mfg. Co.

9. Regeneration of zeolites. using sulphuric acid as the regenerant is discussed in reprint No. 32, being offered by Cochrane Corp. This reprint summarizes the extensive research work which has been conducted on the subject and shows the characteristics of various salts, singly and in combination for acid regenerated carbonaceous zeolites.

10. New developments in self-sealing ball bearings are covered in a folder entitled, "Three More New Departures by New Departure," which is issued by New Departure, Division of General Motors Corp. First, a new and more efficient bearing seal is discussed. Second, the method of revitalizing the lubricant by means of an injection system is covered. Thirdly, a new extra-light seal bearing is introduced.

11. Worm gear speed reducers are the subject of catalog No. 1824, issued by Link-Belt Co. This catalog contains extensive engineering data, horse power ratings, and tables of weights and dimensions to enable an engineer to select the type and size of reducer required.

12. Organic chemicals being offered by Eastman Kodak Co. are covered in a new catalog and price list, No. 34. This catalog is effective for 1944 and supersedes all previous listings.

13. Vibration control as an effective aid to production, maintenance reduction, product quality, and building protection, is discussed in a leaflet being offered by Vibration Control Co. Vibration control mountings for looms, fans, compressors, pumps, etc., are discussed.

14. "Postwar Textile Machinery," is the title of an article appearing in the August-

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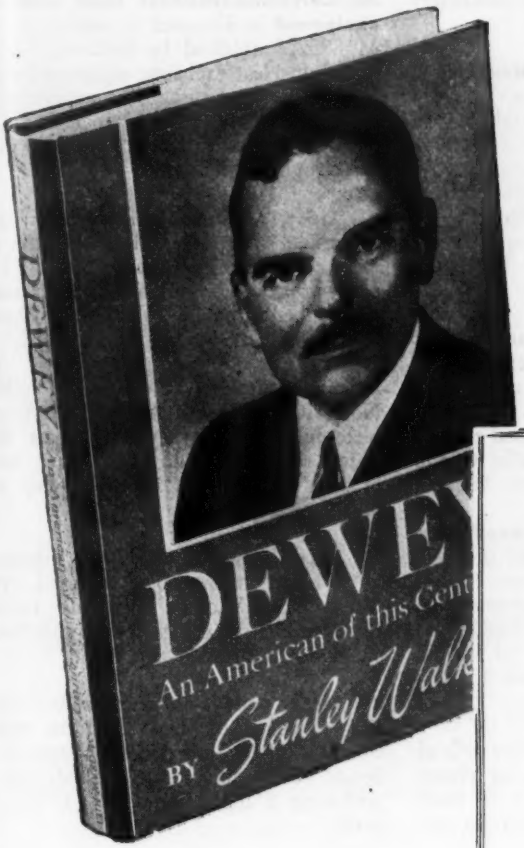

WALTER TROHAN, in the *Chicago Tribune*, says:
"For those who desire to become acquainted with the Republican candidate for President and what he stands for, this is a must book."

N. Y. Journal-American:
"A straightforward picture of the Republican Presidential nominee without the usual worshipful embellishments to which most biographers are prone."

MARQUIS CHILDS, in the *N. Y. Herald-Tribune:*
"The Dewey story is here skilfully put together, and to many readers parts of it will be new."

DEWEY

An American of this Century

By STANLEY WALKER

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Other
McGRAW-HILL *Books*
of Current Interest

1. Raymond Clapper: WATCHING THE WORLD

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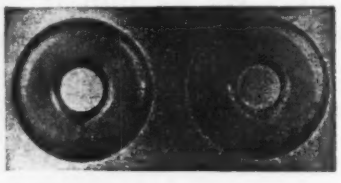

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September issue of *The Houghton Line*, published by E. F. Houghton & Co. This article is of interest to textile men as it contains comments reflecting the opinions of many of the large textile machinery builders.

15. Roller-chain belt application to high speed warpers are discussed in Vol. 10, No. 2 of *The Rex World*, published by Chain Belt Co.

16. Textile courses being offered by the Rhode Island School of Design are described and also the admission requirements necessary are covered in a new 1944-1945 catalog.

17. Chemical plasticizers and resins used in the formulation of waterproof and flameproof coatings for textiles are covered in a booklet entitled Clorafin, offered by Hercules Powder Co. The general properties and characteristics of Clorafin 42 and Clorafin 70 are covered in this booklet.

18. Manufacture of brine for use in textile finishing plants is discussed in a 35-page booklet entitled, "*The Lixate Process for Making Brine*," issued by International Salt Co., Inc. Features of this booklet are brine tables giving information on sodium chloride brine at 60 deg. F. from 0.2 deg. salometer.

19. "Chlorinating Agents," is the title of Technical Bulletin No. 328A being offered by Hooker Electrochemical Co. Such chemicals as chlorine, sulfur chlorides, sulfuryl chloride, thionyl chloride, hydrogen chloride, and phosgene are discussed in detail.

20. Corrosion-resistant heat exchange equipment is discussed in catalog section M 8802, published by National Carbon Co., Inc. Heat exchange equipment made of Karbate, using carbons or graphite given such treatment to make it resistant to chemical action and corrosion, will withstand high temperatures.

21. Electric unit heaters are described in Bulletin 44-U, published by Electric Air Heater Co. The line ranging from 1.5 to 60 kw. for ceiling, wall, or post suspension, is described in detail. Tables giving dimensions, Btu's and weights are included.

22. Spray nozzles are covered in bulletin No. 459, issued by Chain Belt Co. A complete line of flat spray nozzles are illustrated and described. These have many practical applications in the dyeing and finishing operations.

23. Master mechanics will be interested in a folder offered by Chicago-Latrobe Twist Drill Works, describing carbide tipped reamers and high-speed spiral fluted chucking reamers.

24. Motor pulleys are discussed in catalog HT-44, issued by The American Pulley Co. This catalog describes the composition, design, and manufacturing methods used in producing a high-gripping power-type of pulley.

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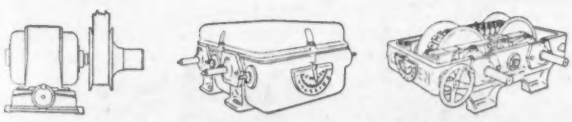

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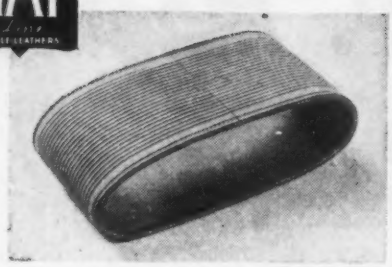

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FULL-FASHIONED MACHINES —CHAPTER XXIV

By Walter A. Simond

THE READING CENTER LACE ATTACHMENT—TYPE 29

THE MAIN POINT SHIFTING UNIT, A, Fig. F-76, when correctly positioned on the narrowing machine shaft will have its cover plate 3 inclined at 16½° when the narrowing machine is down in the knitting cycle. In this position, the loop shifting linkage D, Fig. F-77, should be adjusted so that the high point of shifting collar 20, Fig. F-76, will be on the center pin 21. Be sure to maintain enough tension with idler 13 to prevent any sagging of the pattern chain.

The point positioning mechanism and cams are set as follows: Turn the machine until the shifting roller for the narrowing machine is central with the shifting point of its cam, and then set the slide-lifting cam so that roller 26, Fig. F-78—over the round cam, or flange—is opposite the center of the shifting point. The movements must synchronize.

With the pattern chain turned so the No. 1 or No. 14 screw is under the shifting lever cap 22, Fig. F-76, (depending upon whether the machine is to be used with the picot bars or lace fingers), turn the machine until the lace points come out of the sinkers the second time, then the slide 24, Fig. F-28, should just begin to move the point rods to the right. Be sure the point rods are not moved until the points clear the sinkers.

The pattern chain shifting cam is set, as follows: With the operating linkage positioned as shown in Fig. F-77, have the shifting lever setting against the pin and pawl 28 against the rachet tooth. The linkage which operates the ratchet pawl should move the pattern chain from center to center of the screws, and the screws should come square under the shifting pawl cap shown at 22, Fig. F-76. This cam should be set so that the pawl 28 will shift the pattern chain immediately after the shifting lever cap 22 has cleared the No. 30 screw.

The loop shifting cams are set as

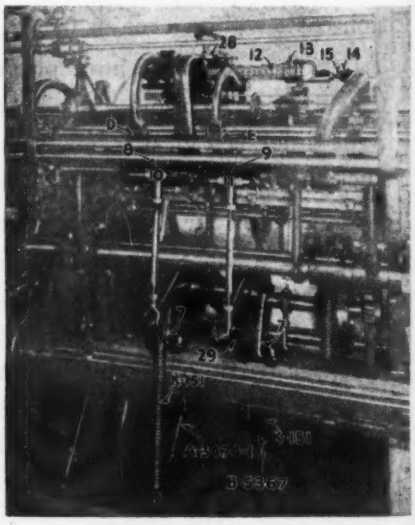

Fig. F-77 Back view.

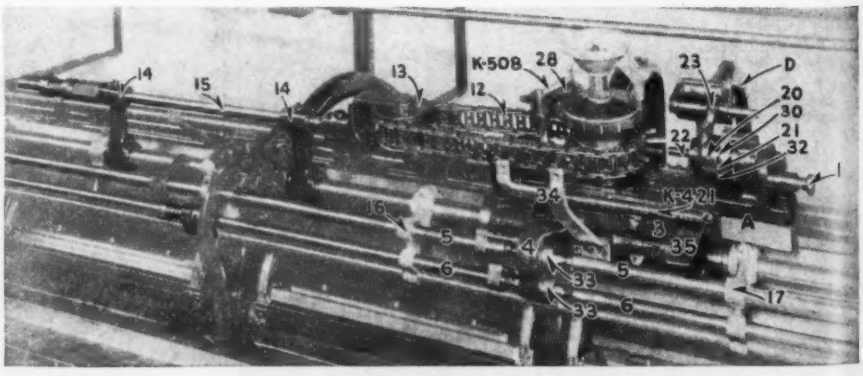

Fig. F-76 Center Lace attachment, type 29. Front view.

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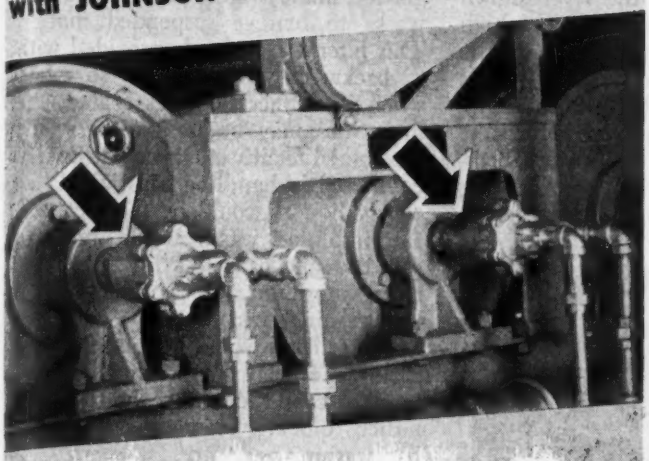

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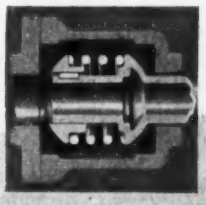

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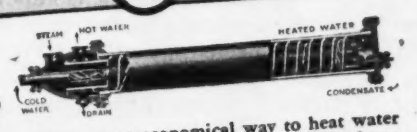

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follows: with the machine in the narrowing cycle, turn the machine until the lace points come out of the knockover beds for the first time. Just as soon as the points are above the bits, hold the machine and set the cams on the camshaft so that roller 29, Fig. F-77 will shift the lever shown as 23, Fig. F-76, and place the high point of the shifting collar 20 on the low pin 30, thus shifting the points one needle to the left. The movement must be completed before the points enter the knockover beds. Shifts to the right are made by means of buttons on the independent chain

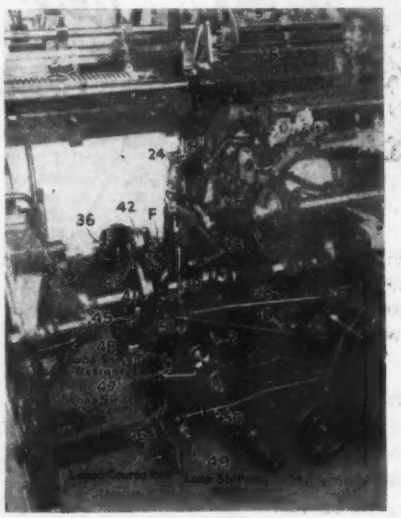

Fig. F-78 Assembly at end of machine.

motion which cause shifting lever 23 to move shifting collar 20 into position over the high pin 32. When picot bars are used instead of lace fingers, have a No. 30 screw under the shifting lever, and the adjustable collar 33 against the shifting fork 4. Have the point rod in its extreme left position when setting the picot bars, and have the first right-hand point in line with the end needle at the right end of the adjacent needle bar. For designs made with the picot bars use screws 14 to 30 inclusive, and for machines equipped with 40 needle movement use screws 24 to 40.

Mercerizing Liquor

(*Continued from page 117*)

starches, waxes, etc., from recovered mercerizing liquors should be made. Many industries, such as the petroleum, sugar, starch, and heavy chemicals, among others, have long been faced with the problem of purification of their products. In many cases, particularly in the starch and sugar industries, the impurities to be removed were present in small quantities and in the form of a slimy flock.

Filtration of the various liquors at once appears to be the obvious answer to the removal of such impurities; and today there is available a wide variety of filtering equipment for this purpose. Probably the simplest type of this equipment is the sand gravity filter, widely used by waterworks to remove suspended matter. This filter is commonly provided with a backwash arrangement so that, when its surface becomes coated, the impurities may be flushed off. One possible difficulty that could be encountered in handling caustic-soda recovery liquors would be the fact that the insoluble waxes would tend to coat the sand particles, thus increasing their buoyancy. As a result, when backwashing was done, too much of the filter itself would be flushed away. Again, the pectins and starches would tend to coat the surface of the filter rather quickly, rendering frequent backwashing necessary.

A variation of the gravity sand filter, and one also used extensively in water filtration, is a type in which a rotating blade, turning slowly, skims off the surface of the filter, moving the collected sludge to a central dump, thus continually exposing a fresh filtering surface. In this type of filter, backwashing is usually unnecessary.

Another development is the vacuum-type filter, using anthrafilt (anthracite coal of selected particle size) in place of sand as a filtering medium. A vacuum pump on the discharge side of the filter provides a greater volume of flow per unit of filter area. Again, backwashing arrangements, preferably using hot water, must be supplied, since the colloidal waxes, etc., in cold water have a tendency to reduce the weight of the anthrafilt, permitting it to float off when the filter is backwashed.

Rotating-disc filters may also be used for filtering recovered caustic liquors. Here it may be desirable to make use of filter-acids in order to form the proper pre-coat on the filter discs. One filter of this type is provided with a doctor blade.

There are many other types of filtration apparatus available, other than those mentioned, which can also be used. In making any installation, the individual plant should consider the amount of recovered caustic to be filtered, quantity and type of impurities, space available for the filter, the amount of heat and power, as well as auxiliary equipment necessary for its operation. A comparison of the initial, as well as the operating, costs should also be borne in mind. In general, the cost involved can well be offset by the decrease in rehandled goods and the improvement in quality.

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NEWS ABOUT Suppliers

Alrose Chemical Co., Providence, R. I., has appointed Archie S. Stevenson as a representative of its Textile Products Division. He was formerly associated with U. S. Finishing Co., Glenlyon Print Works, and Allied Textile Printers, Inc.

The Bahnson Co., Winston-Salem, N. C., has awarded contract to Frank L. Blum & Co. for a plant addition.

F. C. Todd, Gastonia, N. C., textile machinery operator, has sold a half interest in the machine department of F. C. Todd, Inc., to J. Leslie Alexander, for the last 14 years associated with C. E. Honeycutt in the Gastonia Spindle & Flyer Co. and the Gastonia Brush Co. Mr. Todd will continue as president of the company and Mr. Alexander will act as treasurer and general manager of the plant.

Matthews Equipment Co., located since June in Providence, R. I., is acting as a manufacturers' agent specializing in textile equipment items, principally looms and spinning frames. LaVerne A. Matthews, formerly vice president of American Supply Co., has announced that Charles B. Burns, formerly with Atlantic Rayon Co., and Stanley W. Matthews, formerly with the Grinnell Corp., have become associated with the Matthews company.

GUY E. HAIRSTON, who has been appointed manager of the Atlanta district sales territory by American Machine & Metals, Inc., East Moline, Ill., with headquarters at 907 Candler Building, Atlanta. The divisions of the company under Mr. Hairston's supervision include Troy Laundry Machinery, DeBothezat Fan, Tolhurst Centrifugal, and Riehle Testing Machine.

ALBERT LEITSTEIN, who has been appointed to the sales and service staff of the Impregnole Corp., New York, makers of Norane and Impregnole water-repellents.

Smith, Drum & Co., Philadelphia, have added Albert P. March to their Textile Machinery Division as sales representative. Al March was graduated from the Philadelphia Textile School in 1923, and is a member of Phi Psi Fraternity. For a number of years after graduation he was chemist and dyer in various plants throughout Pennsylvania. Later he became associated with the National Aniline & Chemical Co., Philadelphia office, in the Sales and Technical Service Division.

Emmons Loom Harness Co., Lawrence, Mass., has appointed the R. D. Hughes Sales Co., 1812 Main St., Dallas, Tex., as its representative in Texas and Arkansas. Storer y Cia., of Buenos Aires, has been appointed Emmons' representative for Argentina and Uruguay.

Textile Specialty Co., Greensboro, N. C., manufacturers of "Truweave" loom reeds, and representatives for several textile specialty manufacturers in the southern terri-

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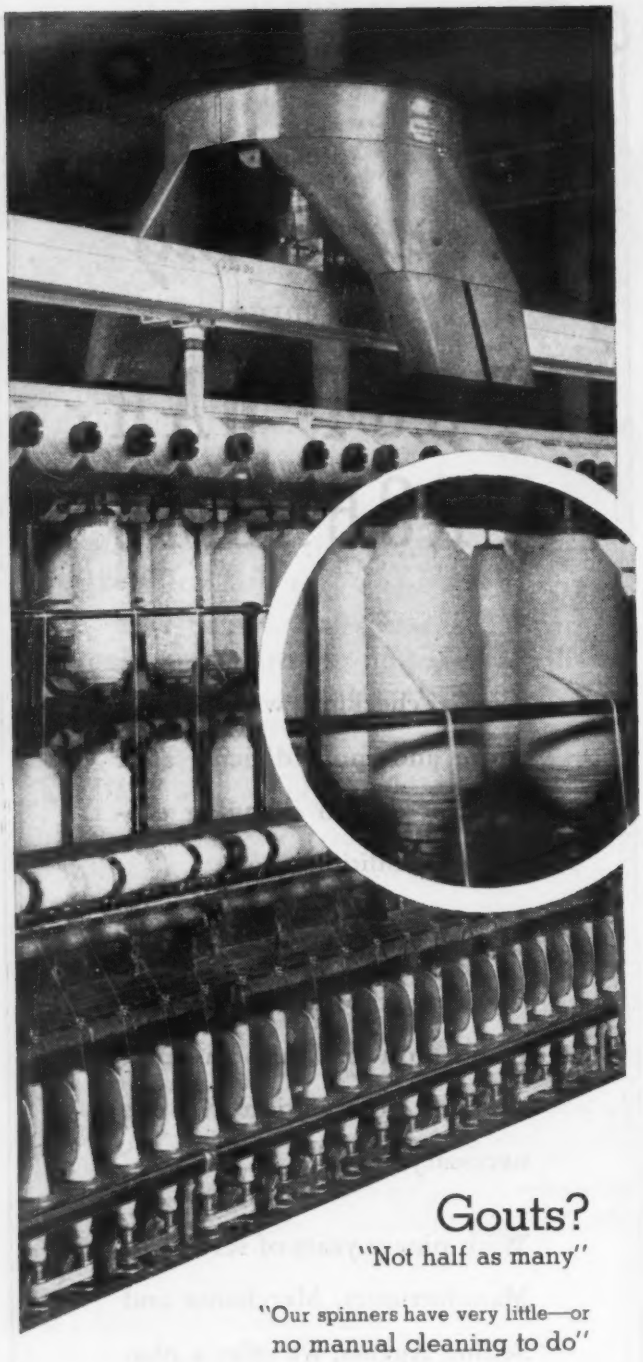

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tory, was recently named representative for Kempton Parts & Spring Co., Gastonia, N. C., on Klenoil oilless bearing bolsters. The Textile Specialty Co. also handles the Stewart Machine Co.'s bolsters, ringholders, etc.

Sonoco Products Co. of Canada, Ltd., Brantford, Ontario, has elected R. J. Fletcher as vice-president and managing director. Mr. Fletcher went to Canada in March 1933 from Hartsville, S. C., when the company was established in Canada. In 1939 he was made secretary-treasurer and manager. J. B. Gilbert, treasurer of Sonoco Products Co., of Hartsville, has been elected to the board and made a vice-president of the Canadian company. L. H. S. Fremantle was elected assistant secretary and treasurer.

Scott & Williams, Inc., Laconia, N. H., has established an office in Reading, Pa., in the Medical Arts Building. J. S. Hubbard and G. R. Stafford will be the local representatives.

JOHN C. TURNER, of Atlanta, Ga., who has been appointed engineering representative for W. D. Dodenhoff Co., Inc., Greenville, S. C., in the states of Georgia and Alabama. Mr. Turner was for almost 25 years associated with Charles Bond Co., Philadelphia, Pa., as southern sales representative. In addition to his new duties, he will manufacture and distribute W-Improved spinning saddles. He is chairman of the associate members division of STA and a past president of the Power Transmission Council in Atlanta. There will be no change in Mr. Turner's Atlanta offices which are at 99½ Walton St., N. W.

J. R. Angel, 1104 Mortgage Guarantee Building, Atlanta 3, Ga., has recently been appointed representative of the Morton Machine Works, Columbus, Ga., and will handle the sales of package, beam, and raw-stock dyeing equipment in the southern territory. He will continue to represent the Tolhurst Centrifugal Division, of American Machine & Metals Inc., East Moline, Ill.

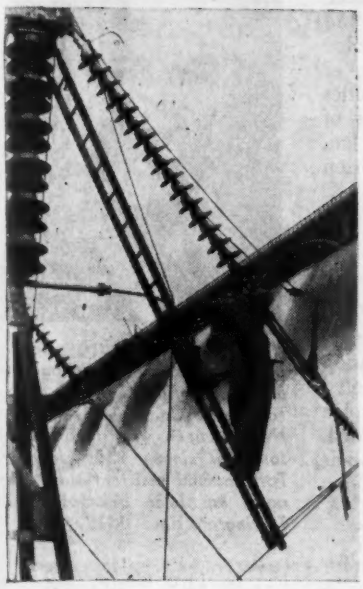
EDGAR C. BRANDT, who has been named assistant to the general manager of the Crocker-Wheeler Electric Mfg. Co., Division of Joshua Hendy Iron Works, Ampere, N. J. Prior to his connection with Crocker-Wheeler, Mr. Brandt was with Elliott Co. as vice president and general manager, and with Westinghouse Electric & Mfg. Co.

Emery Industries, Inc., Cincinnati, Ohio, has opened a branch sales office and warehouse at 401 N. Broad St., Philadelphia, Pa. M. Jay Veenstra assumed responsibilities of district chemical sales manager on Oct. 1.

Hart Products Corp., New York, has appointed Thomas H. Hart as its representative covering Pennsylvania and nearby states. He is a graduate of Philadelphia Textile School and a member of Phi Psi Fraternity. He has had 13 years of experience in the field of textile wet processing including the application of permanent finishes and synthetic chemicals.

E. I. duPont de Nemours & Co., Wilmington, Del., report recent changes as follows: Howard J. White and James S. Denham, managers of the Rayon Division and the Acetate Division respectively, were appointed to newly-created positions of assistant managers of the Rayon Department. Mr. White will coordinate operations and technical work, and Mr. Denham will coordinate commercial and sales activities, under the directoin of B. M. May, assistant general man-

COFFING HOISTS



Pictured above is lineman Ned Ingalls who, with the aid of a Coffing "Safety-Pull" hoist, is man-handling a soon-to-be "hot" wire, as he imitates the "man on the flying trapeze" from his dizzy perch at Grand Coulee Dam.

We do not claim that Coffing Hoists are the final and perfect achievement, but for 16 years our hoists have been doing their jobs well.

We do claim that Coffing Hoists are the best we know how to build and experience shows them to be generally efficient. (The Army and Navy wouldn't be using them if they weren't.)

We hope that Coffing Hoists are helping to hasten the day of peace—the day our boys can come home again—the day you can call your supplier and say: "Send me a Coffing Hoist"; and your supplier can reply: "Coming right up, brother, we've got 'em in stock."

Write today for Catalog 000 G-6.

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Danville, Illinois, U. S. A.

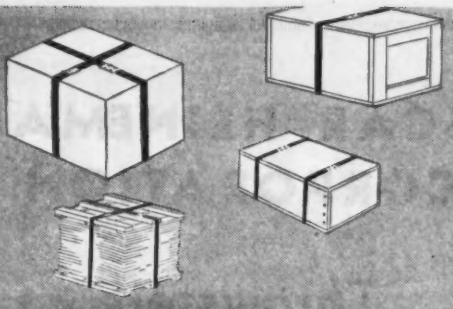
PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
Penick and Ford's Starches and Gums for sizing Corduroy warps insure dependable weaving and maximum cutting efficiency. Let's try the type they recommend. Jim



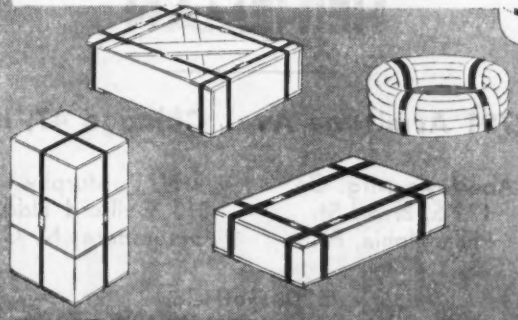
REINFORCED BY *Acme Steelstrap*

. . . and "BOUND TO GET THERE"

The scientific reinforcement of shipping packs—from single containers to carloads of freight—is the business of Doc Steelstrap, who is represented by Acme engineers.

Today, on every fighting front, there is evidence of their skill—on cases, cartons and crates, on bales and on skid loads—on materiel and supplies from Army and Navy depots, from arsenals and from war industry. Strap has a full-time war assignment, part of a job that Uncle Sam calls "pack it right to reach the fight."

It's the same job that we have always called making shipments "Bound to Get There." When their war work is finished, Acme engineers will be ready to discuss the possibilities of steelstrap reinforcements for your post-war business . . . wherever it may travel.



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ACME STEEL CO. CHICAGO

OSCAR HEINEMAN CORPORATION

Throwsters of Yarns

FOR THE HOSIERY TRADE

Quality Products for Fifty Years

We take pride in the fact that we were pioneers in the practical application of *Avconit in the sizing and processing of high twist Rayon yarns.

It now affords us great pleasure to announce that we are prepared to process Rayon yarns with the new improved *Avconit No. 4, for immediate delivery.

We have been cooperating with the research department of the American Viscose Corporation for weeks in making practical commercial tests, and as a result of these tests we recommend the use of *Avconit No. 4 in the processing of either Viscose, Bemberg or Acetate high twist yarns.

We are changing over our entire production to *Avconit No. 4 as we consider it superior in every way to No. 3.

For best results have your yarns processed by

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*Trade Mark
American Viscose Corp.

ager of the department. Frank B. Ridgway was named manager of the Rayon Division, succeeding Mr. White, and William Shackelford succeeded Mr. Denham as manager of the Acetate Division. Charles A. Cary, assistant manager of the Nylon Division since Jan. 1, 1940, was named division manager. He succeeds E. K. Gladding, whose recent appointment as director of the Development Department, succeeding Dr. Fin Sparre, became effective Sept. 1, 1944. Warren A. Beh, assistant sales director of the Nylon Division since 1940, has been promoted to director of nylon sales. He succeeds Robert A. Ramsdell, recently appointed assistant manager of the Nylon Division. George S. Demme, district sales manager in the New York office of the Rayon Division for the last four years, will succeed Mr. Beh as assistant director of nylon sales. William Richter has retired as general manager of the Fabrics and Finishes Department, and J. Warren Kinsman has succeeded him. Dr. William Kirk, manager of the Chambers Works at Deepwater Point, N. J., will succeed Mr. Kinsman, who until now has been assistant general manager of the company's Organic Chemicals Department. Robert J. Goodrich has been promoted to be manager of the Chambers Works.

Lear, Inc., Piqua, Ohio (formerly Lear Aira, Inc.), which has specialized on small high-speed electric motors with gear and clutch mechanisms for aviation use, together with aircraft radio communication systems, will enter the field of industrial and office equipment after the war.

Oxychloride Cement Association, 1010 Vermont Ave., N. W., Washington, D. C., has been formed by the three leading producers of this material. Dow Chemical Co., F. E. Schmidler & Co., and Westvaco Chlorine Products Corp.

Industrial Oven Engineering Co., Cleveland, Ohio, has appointed Hubert Glatte of Buffalo, former assistant purchasing agent for National Gypsum Co., to be district engineer in Industrial's Western New York territory.

General Chemical Co., a subsidiary of the Allied Chemical & Dye Corp., will construct a $1,000,000 chemical plant at Front Royal, Va., occupying ten acres of a 77-acre farm adjoining the property of American Viscose Corp.'s rayon plant. The entire sulphuric acid output of the chemical plant will be consumed in war production, most of its tonnage going directly to the nearby American Viscose plant for the manufacture of rayon.

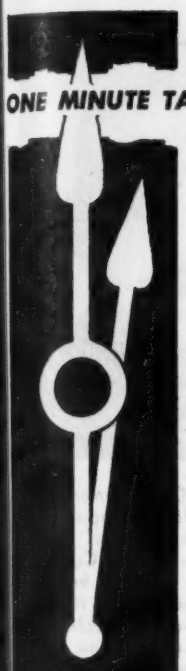
HAROLD C. OLSON, who has been named sales manager of Bantam Bearings Division of The Torrington Co., South Bend, Ind. He has been with The Torrington Co. since 1935. John A. Toth, named assistant sales manager, has been associated with Torrington since 1929.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed R. W. Mothershed, chief warehouse auditor, and A. W. Smiley, general auditor, to be assistant comptrollers of the company.

Carrier Corp., Syracuse, N. Y., reports that Frederick W. Smith, for 19 months Chief of the Special Equipment Branch of the General Industrial Equipment Division of WPB, will become associated with it on Nov. 1. Prior to his joining WPB in April, 1942, Mr. Smith was for 16 years with the Frigidaire Division of General Motors Corp.

S. C. Johnson & Son, Inc., Racine, Wis., have made the following appointments in their sales and research divisions: R. W. Carlson, formerly Central Divisional manager, to be sales manager with headquarters at Racine; John H. Hurley, formerly manager of the Maintenance Paint Division, to be manager of the Product Finishes Department, including water-repellents for the textile industry; James W. Barrett, Jr., for-

ONE MINUTE TALKS ON



Quicker Way to Cleaner Floors!

Washing spinning-room floors manually or by power-driven scrubbing machines . . . either way you'll get cleaner floors in less time when you use that quick-acting, grease-dissolving detergent, Oakite Penetrant, in your washing solution make-up.

Leading mills are finding this specialized material today's successful answer to safer, more economical floor washing. They have found, too, that Oakite Penetrant, because of its remarkable free-rinsing qualities, leaves floors quick-drying, film-free . . . non-slippery!

FREE DIGEST describes this and 53 other important mill maintenance and related jobs. Send for YOUR copy TODAY!

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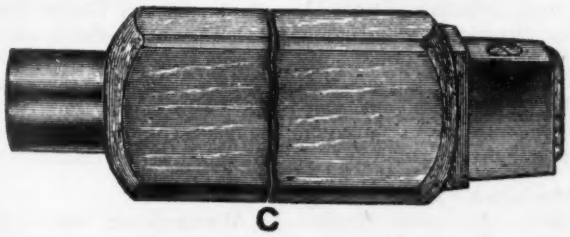
Technical Service Representatives Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT



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DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY Cedar Brook, N. J.

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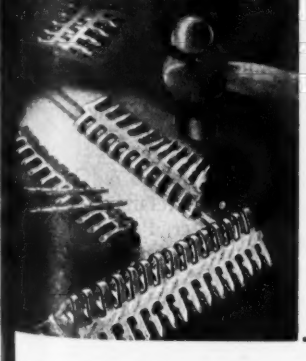
STEELGRIP
FLEXIBLE BELT LACING



ARMSTRONG - BRAY
STEELGRIP
Flexible Belt Lacing

11 sizes boxed or in long lengths for wide conveyor belts. Best for rubber and fabric belts because it compresses belt ends and prevents fraying. Applied in a few minutes with a hammer. 2-piece hinged rocker pins. Also, WIREGRIP Belt Hooks that fit any lacing machine. Immediate delivery on both types.

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"The Belt Lacing People"
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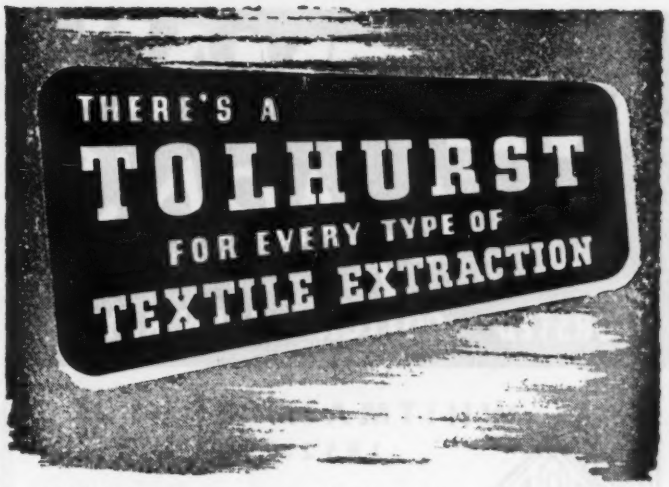
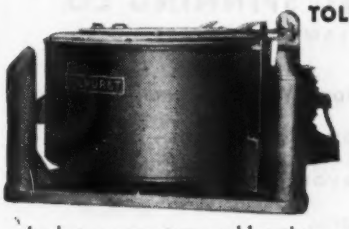


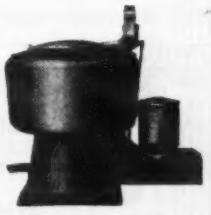
TOLHURSTS have proven themselves time and again the fastest, most efficient extractors in the textile field. For every need, for every material, the right Tolhurst will do it better and faster

TOLHURST "SUPREX"—For cotton raw stock this 48" extractor has proven its worth, in speed of extraction, economy and production. Smooth, efficient operation is assured by "SUPREX" suspension principle. Higher rotational speeds mean quicker and greater extraction. Timer control eliminates guessing when load is finished.



TOLHURST "CENTER-SLUNG" Every feature of the "CENTER-SLUNG" has been designed to produce greater volume in shorter time. Unexcelled for underwear, tubing, hosiery and other fabrics. The exclusive center-of-gravity basket suspension enables this machine to handle unbalanced loads and assures smooth operation. Available in 40", 48" 60", 72" basket sizes.

TOLHURST "SOLID CURB" Designed for rapid handling of small loads, the Tolhurst "SOLID CURB" Extractor is ideal for yarn, hosiery and other textiles. Motor drive. Basket sizes 20" and 30"



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ARMY E NAVY

Tolhurst CENTRIFUGAL DIVISION

AMERICAN MACHINE AND METALS, INC.
EAST MOLINE, ILLINOIS

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.
SELLING AGENTS

BOSTON, 78 Chauncy St. NEW YORK, 261 Fifth Ave.
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merly in charge of Large Consumer Wax Division, to be manager of the Maintenance Products Department; Walter A. Bridgeman to be manager of field research in the Research and Development Division; Harvey W. Blankenship, formerly advertising manager for Graver Tank & Mfg. Co., Inc., Chicago, to be industrial sales promotion manager.

Pennsylvania Salt Mfg. Co., Philadelphia, formally opened its new Whitemarsh Research Laboratories at Chestnut Hill, just outside of Philadelphia on Oct. 4, 5, 6 and 7. The ceremonies on Oct. 4 included the formal dedication. Leonard T. Beale, president, presented the key to Dr. S. C. Ogburn, Jr., manager of research and development. The location is in the mansion formerly the home of Edward T. Stotesbury which was acquired some months ago, as described in these columns at the time.

Brown Instrument Co., Philadelphia division of Minneapolis-Honeywell Regulator Co., has started its 1944-45 classes on industrial-instrument maintenance and repair, which will be attended largely by personnel from customer plants. The courses will continue until and including Dec. 22. Latin American industrialists are also offered an opportunity to provide groups of employees with free technical and practical instruction in precision industrial instrumentation.

Manhattan Rubber Mfg. Division, Raybestos-Manhattan, Inc., Passaic, N. J., has appointed Littleton C. Barkley, manager of its New York office, to be sales manager of its Mechanical Rubber Goods Sales Department. For the present his office will be located at 120 Broadway, New York.

Bound Brook Oil-Less Bearing Co., Bound Brook, N. J., has appointed R. B. Golling, 120-63 Edgewater Drive, Lakewood, Cleveland, Ohio, as its representative in Ohio, Western New York and Western Pennsylvania. W. K. Swift, 159 West Berkley Ave., Lansdowne, Pa., formerly located in Cleveland will represent the company in Eastern Pennsylvania, Southern New Jersey, Maryland, Delaware and Virginia.

The Foxboro Co., Foxboro, Mass., has added Walter H. Ridley to its sales promotion department, at the head office, Foxboro, Mass. He has been a designer and sales engineer on textile mill machinery, and for the last two years was in the Boston office of WPB.

JAMES S. ROSE, formerly supervisory methods engineer in charge of heating and ventilation, Curtiss-Wright Co., Buffalo, N. Y., who has been appointed manager of the new branch office of Ilg Electric Ventilating Co. of Chicago, at 55 New Montgomery St., San Francisco, Calif.

General Electric Co., Schenectady, N. Y., has reelected Charles E. Wilson as president of the company following the resignations of Owen D. Young and Gerard Swope as chairman of the board and president respectively. Mr. Wilson had previously resigned his WPB connection. No announcement of a successor to Mr. Young as chairman was made.

Westinghouse Electric Elevator Co., Pittsburgh, Pa., has appointed William A. Minkler as application manager for air-conditioning. Mr. Minkler first joined Westinghouse in the East Pittsburgh, Pa. works in 1927. From 1941 to 1944 he was air-conditioning sales manager of the Young Radiator Co., returning to Westinghouse in 1944.

The B. F. Goodrich Co., Akron, Ohio, has appointed Ernest P. Weckesser, a veteran of World War I, to be administrator to correlate all activities connected with the employment of returning veterans.

Walter Kidde & Co., New York, have retained Princeton Film Center, Princeton, N. J., as distributing agents for their motion picture, "Flame Facts." This is a 20-minute, 16 mm. Kodachrome sound film.

Always mistily sheer and charming, exquisitely soft and dainty—miles more wear—when Milady's hose and clothing fabrics are *DuraBeau* finished.

DuraBeau FINISHES
Reg. U.S.A. and Canada

SCHOLLER BROS., Inc.,
Mfrs. of Textile Soaps, Softeners, Oils, Finishes
Collins & Westmoreland Sts., Phila. 34, Pa.
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Points to remember
Buy War Bonds and

NEW BEDFORD, MASS.
ALLEN COMPANY.

CONSERVE YOUR BEAMS!
Treat Shafts Gently when Beam is Full

ALLEN COMPANY, 136 River Road
New Bedford, Mass.—So. Rep.
Mr. L. E. Wooten, Fort Mill, So. Car.

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Industrial construction you want, when you want it, where you want it, anywhere in the South.

DC DANIEL CONSTRUCTION CO., INC.
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★ ★

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
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Caldwell TANKS and TOWERS

DON'T GUESS! TEST R.P.M.

With a MODEL "J" HAND TACHOMETER
Triple Range:
300— 1200 R.P.M.
1000— 4000 R.P.M.
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WRITE FOR BULLETIN #706

HERMAN H. STICHT CO. INC.
27 PARK PLACE NEW YORK N. Y.

. . . popular wartime color with a

postwar fashion importance!

Navy Blue is the color fashion of today's dress parade...smart, uniform *true blue*, the traditional color of the United States Navy. In postwar fashion parades, the perennial smartness of Navy Blue will be further distinguished by the added beauty and color fastness of *true blue*.

Helpful in the preparation of *true blue* Azo dyes for Navy Blue is SOLVAY SODIUM NITRITE. This pure, free-flowing crystal of U.S.P. quality is especially suited for manufacturing dyes and for textile dyeing.

For *true blue* dyes and dyeing—specify SOLVAY SODIUM NITRITE and be sure of results!

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SODIUM
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NEWS ABOUT *Men*

Walter Brockmeyer has been named president-treasurer of Paul Knitting Mills, Pulaski, Va., in a reorganization. **George L. Chapman** has been named vice president with **J. Frank Wysor** remaining secretary. Mr. Chapman recently acquired a large block of stock in the mills.

Walter E. Morton is the newly-elected president and treasurer of Dunson Mills, LaGrange, Ga.; **H. D. Burk** is vice president; **Raymond Fort**, assistant treasurer, and **George S. Johnson**, secretary.

Harold W. Whitcomb, formerly assistant to **Luther H. Hodges**, vice president and general manager of the Manufacturing Division of Marshall Field & Co., has been appointed assistant general manager. His headquarters will be at Spray, N. C., after Jan. 1.

Dr. Milton Harris will resign as director of research for Textile Foundation and Textile Research Institute on Jan. 1, 1945, to enter business on his own account in research and consultation in Washington, D. C. He will have associated with him **Dr. Lyman Fourt, Henry A. Rutherford** and **Arnold M. Sookne.**

W. M. McLaurine, of Charlotte, N. C., secretary-treasurer of American Cotton Manufacturers' Association, has been appointed vice-chairman of the industrial section of the Southern Safety Conference, which will hold its seventh annual convention next March 18 to 20 at Winston-Salem, N. C.

Hugh H. Lawson, sales manager of York Knitting Mills Ltd., Toronto, Ont., since 1932, was recently appointed one of the vice-presidents of the firm. He is also president of Canadian Woolen & Knit Goods Manufacturers Association, and chairman of the Advisory Committee to the Knit Goods Administrator.

Wilbur A. Lazier has resigned as research group leader in the Chemical Department, E. I. du Pont de Nemours & Co., to become Director of Southern Research Institute, which will establish laboratories at Birmingham, Ala.

Auguste Richard has become a partner in F. Eberstadt & Co., investment bankers, New York. Formerly vice president and director of Pacific Mills, Mr. Richard severed his business connections in 1942 to

BOTANY WORSTED MILLS, Passaic, N. J., has appointed Maj. Gen. Irving J. Phillipson as Director of Industrial Relations. He is at left in above picture, taken at a dinner of company officers, foremen and shop stewards on Sept. 8. The dinner was given by Col. C. F. H. Johnson, president of the company, (shown at right) to announce General Phillipson's appointment and to mark the entrance of the Textile Workers' Union as the company's bargaining agent. Emil Rieve, president of that union, is shown at center. General Phillipson, who was awarded the Distinguished Service Medal at Governor's Island on Sept. 5, is awaiting retirement from the Army after a distinguished career as a combat officer in the first World War, commanding officer of the Second Corps Area, Director of Army Emergency Relief, and Director of the War Department Dependency Board.

NAUMKEAG STEAM COTTON CO.

Owners and operators of
PEQUOT MILLS . . . DANVERS BLEACHERY

COMMISSION BLEACHING DYEING AND FINISHING

- Direct dyeing
- Sulphur dyeing
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- Fast color Label and Tag Cloths
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PEQUOT SHEETS AND PILLOW CASES

WHERE PEQUOTS ARE FINISHED

MURDOCK Bobbin Holders

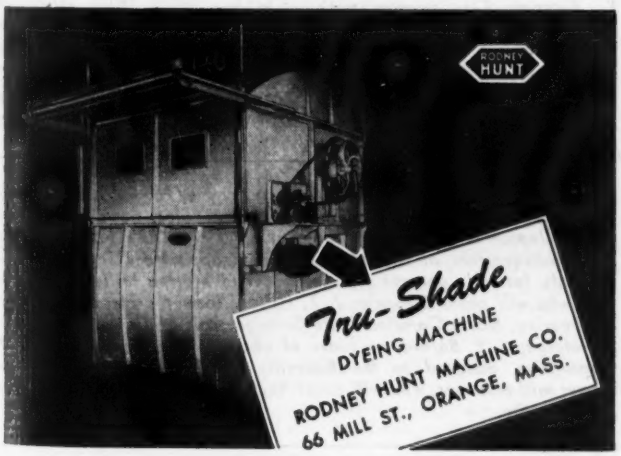
Two exclusive Features Affording Long Life:

1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.
2. Holding wings held positively in position by skeleton washer—no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.
Manufacturers of Bobbin Holders for Over Fifty Years



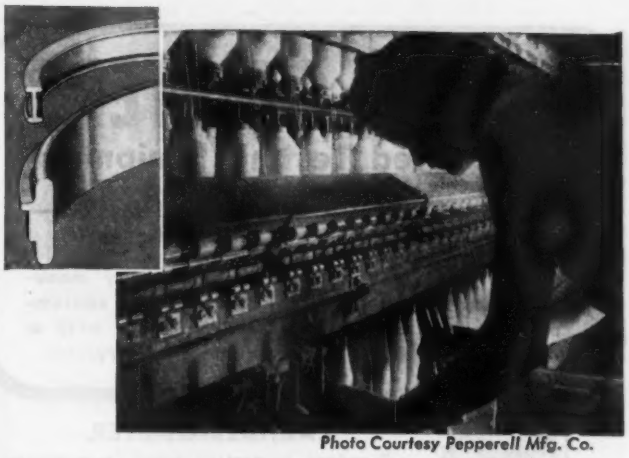


Photo Courtesy Pepperell Mfg. Co.

One Production-expansion Step you can take NOW

In looking ahead to the day machinery manufacturers can deliver your new spinning and twisting equipment, don't lose sight of the fact that rings can improve your operation TODAY. Repair worn standard rings with new DIAMOND FINISH and get substantial production gains. Repair with our Eadie lubricated rings and get still more.

We make all types of holders

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

DAVIS AND FURBER

For the duration our shops are principally engaged on war work.

We are doing our utmost, by extra effort and careful planning, to deliver essential supplies for repairs and maintenance.

MACHINE PARTS FOR REPAIRS
AND MAINTENANCE
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
LEATHER RUBB APRONS
LEATHER CONDENSER TAPES

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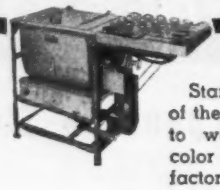
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

ATLAS-OMETERS

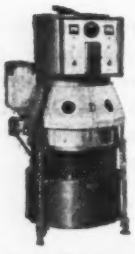
Accelerated Testing Equipment

- Reduce years of actual use to just a few day's testing.
- Required for testing in many Federal Specifications.
- Used in 36 countries—all over the world.
- Recognized by manufacturers and consumers alike for over a quarter-century.



LAUNDER-OMETER

Standard laboratory washing machine of the A. A. T. C. C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors carefully controlled—can be reproduced exactly at any time.



FADE-OMETER

Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

WEATHER-OMETER

Duplicates effect of actual exposure—months of sun, rain, heat and cold condensed to a few days.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago 10, Illinois

ATLAS-OMETERS
LAUNDER-OMETER • FADE-OMETER • WEATHER-OMETER

THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper; Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The Terrell Machine Co. *Inc.*

CHARLOTTE, N. C.

James F. Notman.....Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
W. J. Westaway Co., Ltd.....Hamilton and Montreal, Canada
Geo. Thomas & Co.....Manchester, England.—European Agt.

go to Washington as chairman of the Army and Navy Munitions Board. He was president of the Spool Cotton Co. from 1931 to 1939.

A. Felix du Pont, vice-president of E. I. du Pont de Nemours & Co., Wilmington, Del., has retired as a member of its finance committee. He will continue to serve as a member of the board. **Edward Yancey,** until now general manager of the explosives department, was elected a vice-president and member of the executive committee. **Emile du Pont,** production director of the Nylon Division and a director of the company, was named to succeed **A. Felix du Pont** on the finance committee.

A. B. Emmert has been elected a vice president of Riverside & Dan River Cotton Mills, Inc., Danville, Va. He is head of the cotton department.

James N. Marshall has been elected vice president of Madison Woolen Co., Madison, Me., and of Cotwool Mfg. Co., Lewiston, Me.

W. P. Walker, comptroller of Woods Mfg. Co., Montreal, Canada, and a member of the board of directors since 1941, has become one of the vice presidents. On its creation he joined the Canadian Wool Administration and since then he has been associated with the Crown companies, Canadian Wool Board Ltd. and Melbourne Merchandising Ltd.

Fred M. Abernathy, formerly with China Grove Mill, China Grove, N. C., is now overseer of quiller room at Gastonia Combed Yarn Co., Gastonia, N. C.

E. F. Powell, formerly superintendent of Valway Mill, La Grange, Ga., is now with the rug mill of Marshall Field & Co., Spray, N. C.

Robert F. Smith has been made production manager for Ashland Corp., Jewett City, Conn. He comes from Carleton Yarn Mills, Cherryville, N. C., and succeeds **Thomas J. Culpepper,** who has gone with American Viscose Corp.

Lewis F. Reading, assistant secretary of the New York Cotton Exchange retired on Sept. 12 after 40 years service as an employee of the Exchange.

W. R. Beldon, plant manager of The Clark Thread Co. of Georgia, Clarksdale, Ga., has resigned and will go to California to make his home.

Foster Howell has been appointed southern representative of Neuss, Hesslein & Co. He will make his headquarters in the Woodside Building, Greenville. He will continue to serve as industry representative on the Southern Regional War Labor Board. He was lately cost expert and southern field agent for the Cotton-Textile Institute.

Frank Hill, head cost accountant of Consolidated Textile Corp., Lynchburg, Va., and **Horace Robertson,** head cost accountant of Cannon Mills, Kannapolis, N. C., have joined OPA on a consulting basis and will serve in the accounting department of the agency to help with the textile industry cost work. Other cost accountants who recently joined OPA as consultants on cost work pertaining to the textile field are **Richard Carr,** of Gaffney, S. C., and **Alexander N. Gee,** both of Spartan Mills, Spartanburg, S. C., and **William J. Roddey, Jr.,** of Victoria Cotton Mills, Rock Hill, S. C.

R. H. Bennett, of Hatch Full-Fashioned Hosiery Mills, Belmont, N. C., and **B. N. Gillespie** of Kings Mountain, N. C., have been appointed to the OPA staff, Bennett being named to serve as unit head of the knit goods branch of the rayon division of the OPA's consumer goods price

NEW FIELD MEN have been appointed by WPB to assist mills in solving technical problems which may be slowing down production. Alfred Jepson is southeastern regional chief of WPB's textile section, with headquarters at Atlanta. The new appointees include J. C. Edwards, formerly general superintendent of Martha Mills, Thomaston, Ga., who will cover Georgia; J. T. Hilton, former professor of textile engineering, North Carolina State College, Raleigh, with headquarters in Raleigh; J. E. Barbre, on leave of absence from a southern textile corporation, assigned to the Knoxville District; and L. O. Bunton, former mill manager, who will cover South Carolina, with headquarters in Greenville.

ALDON SPINNING MILLS

ALFRED W. CAVEDON

Spinners of Fine Woolen

Merino & Specialty Yarns

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DANA WARP MILLS

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Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

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Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, California

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MANUFACTURER OF
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American • Hicks • Wilson
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MAKE STRONGER YARN
National-Etartnep Finish
A New Chemical Treatment
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National Ring Traveler Company
354 Pine St., Pawtucket, R. I.
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P.O. Box 1565, Providence, R. I., Charlotte, N. C.

Better Carding Less Bearing Wear

Oils that drip and leak can't stay in bearings and will not protect the close and accurate adjustment of bearings so essential to perfect carding.

NON-FLUID OIL—drip-less and waste-less—stays in bearings, keeping them cool and free from wear. Shows a definite saving on lubricant and application cost. Outlasts oil 3 to 5 times.

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***Main Office:* 292 Madison Ave., New York, 17, N. Y.**
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TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

Machine and Hand Knitting

Yarns

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for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

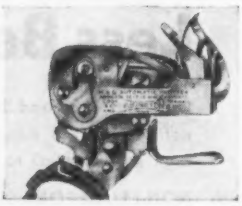
★

Complete color assortments

American Woolen Company

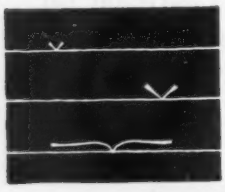
225 Fourth Avenue **New York**

"Learners use it like old hands."



ABINGTON WEAVER'S KNOTTER

Automatically ties a weaver's knot and automatically scissor clips the tails. Knots positively non-slip. May be regulated to produce tails any desired length from ¼" down to minus 1/16". Promotes maximum winder production.



REQUEST KNOTTER CATALOG

ABINGTON

ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.
Vacuum Card Strippers – Yarn Dyeing Systems – Weaver's Knotters
OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.

ACTUAL SIZE
EMPIRE
textile
mill crayons
THE PERFECT MARKER FOR ALL TEXTILE MILLS
Especially made for marking the roving in wool, cotton, silk, rayon, and all textile mills.
Supplied in 18 clear, distinguishable colors.
Write to Dept. T-1 for a FREE chart showing these colors.
• Reg. U. S. Pat. Off.
THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

NEWS ABOUT MEN

division, and Gillespie being appointed to work on OPA problems in connection with the Bankhead amendment to the Stabilization Extension Act of 1944.

Robert H. Walker, vice president of Pickett Cotton Mills, Inc., High Point, N. C., was recently appointed to work in the cotton section of OPA.

Arthur F. Black has resigned as Charlotte, N. C., district priorities manager of WPB to re-enter the textile business.

Norman F. Walthers, formerly personnel director of Waltham Watch Co., has been appointed director of industrial relations at Lorraine Mfg. Co., Pawtucket, R. I.

Hiram S. Hall has been named director of industrial relations of the Bigelow-Sanford Carpet Co., Thompsonville, Conn. Mr. Hall was previously associated with the Ranger Aircraft Engines Division of the Fairchild Engine & Aviation Corp. in a similar capacity.

Robert F. Jessen has joined the staff of the Callaway Institute, Inc., of LaGrange, Ga., as a research engineer, specializing in projects dealing with rayon and other synthetic yarns and fibers. He had been superintendent of Stanley Mills, Inc., Stanley, N. C., for the last three years, specializing in spun rayons.

William Bogart, of the office of Herman Cone, president Proximity Mfg. Co., Greensboro, N. C., was recently appointed a member of OPA's cotton section of the primary products branch.

Albert G. Dunson, formerly associated with the Dunson Mills at LaGrange, Ga., has become general manager of the Summerville Mfg. Co., Summerville, Ga.

George W. Baity, general engineer for Proximity Mfg. Co,. Greensboro, N. C., is the newly-elected president of the Raleigh, N. C., section of American Society of Mechanical Engineers.

William Jacques, general manager of Kanmack Mills, Manchester, N. H., has resigned.

E. S. Gary, Jr., Baltimore cotton broker and former

MISS PEGGY SWEET, who heads the newly-formed Fashion Promotion Division of American Silk Mills, New York. For the last four years Miss Sweet has been merchandise editor of Glamour Magazine.

manager of C. R. Daniels & Co., textile mill at Alberton, has joined the Office of the Quartermaster General as a civilian textile consultant.

William Cairns has resigned as supervisor accountant for Barrow, Wade, Guthrie & Co., to join the Verney Mills as internal auditor, with headquarters at the company's Boston office.

George R. Grice, formerly overseer of spinning at Modena Mill (Burlington Mills), Gastonia, N. C., is now superintendent of Rex Hanover Mills, Nos. 1, 2, and 3, Gastonia, N. C.

Rudolph A. Oehl has been named traffic manager of Bigelow-Sanford Carpet Co., Thompsonville, Conn., to succeed the late A. M. Potter, who was traffic manager for 25 years. **E. H. Wanstall** has been appointed assistant traffic manager.

Lawrence B. Steele, Jr., research chemist in the acetate research section of E. I. du Pont de Nemours & Co., Waynesboro, Va., has been appointed research supervisor in the same section, and will supervise work on problems related to high-tenacity rayon yarn.

A. B. Brown is now superintendent of the Mayo Mills, Inc., Mayo, S. C.

Robert Leslie has been appointed superintendent at the Southwell Combing Mill, Chelmsford, Mass. He was previously with **Stuart** Rayon Co., Philadelphia, and also with the worsted division of the former Amoskeag Mfg. Co.

SOFTER, BETTER KNITTING COTTON YARNS—DYED OR BLEACHED—

with Laurel Emulsions

Laurel Emulsions—Hydrocop and 3B Softener—condition and soften cotton yarns, mercerized, dyed or bleached. Used by hundreds of mills for over 25 years to assure proper regain, speed up twist, produce even-running yarns and clearer stitch. Laurel Hydrocop and 3B Softener will not turn rancid or discolor yarn on standing. Easily applied over roller trough or cone winders, quilling frames, or twisters. If you want softer, better knitting yarns to help you meet specifications, send for a trial order of these veteran emulsions, Laurel Hydrocop and 3B Softener today.

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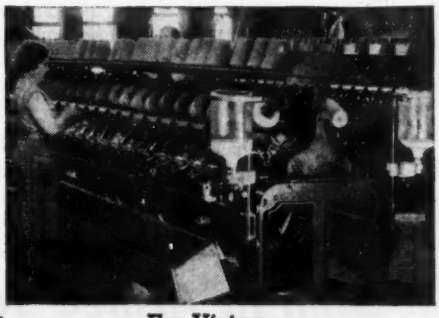

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Wm. H. Bertolet's Sons • *Established 1909*

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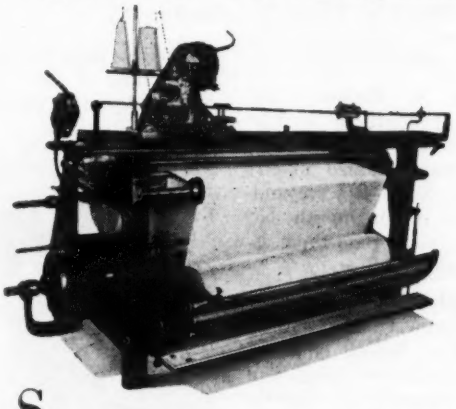
WAREHOUSES: PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

NEW *Dinsmore*

Opening, Sewing and Re-rolling Machine



SHOWING the application of the Merrow Butted Seaming Head to our No. 4 Opening, Sewing and Re-rolling Machine . . . Produces a strong, flat butt seam on cotton, silk or other piece goods . . . trims off waste edges of goods just in advance of stitching operation . . . The Merrow Butted Seaming Head can be applied to your present machine . . . *write for estimate of cost.*

DINSMORE MFG. CO.

Also Textile World Export Catalog

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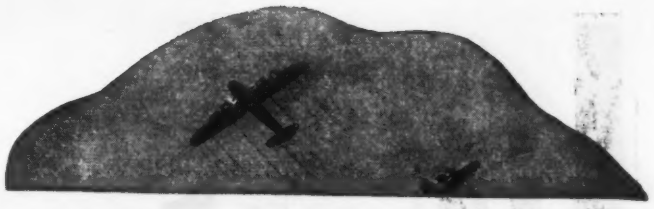
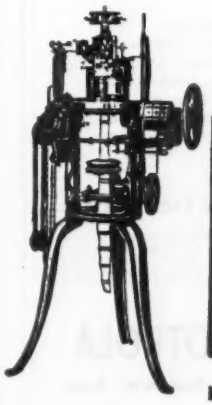


"FIRST THINGS COME FIRST"

FRANKLIN D. ROOSEVELT, PRESIDENT OF THE UNITED STATES

Your Uncle Sam has right of way insofar as our facilities are concerned. His requirements and his orders come FIRST, and we are proud to serve our country. At the same time, we regret that it may be necessary to ask our customers — users of Brinton Knitting Machines — to wait, until we can care for their needs.



BRINTON

Circular Knitting Machines

3700 KENSINGTON AVE.

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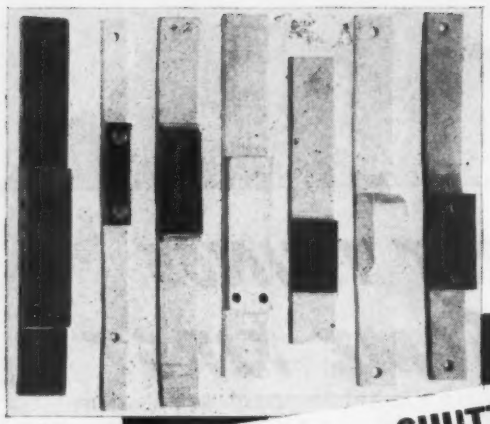
BUY WAR SAVINGS BONDS AND STAMPS



Champion SHUTTLE CHECK STRAPS

Made to any specifications or from your pattern in our files.

A recent development, exclusive with CHAMPION, is a sharkskin cap which we are now putting on the top of shuttle leather checks. . . Actual wear tests have shown this adds two to three times ordinary wear.

W. D. DODENHOFF COMPANY
INCORPORATED
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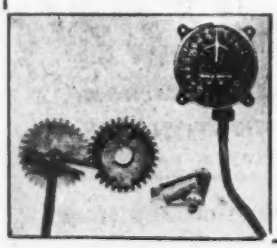
INDISPENSABLE FOR CONTROLLING AND INCREASING PRODUCTION

Every textile plant can benefit through the use of Jones Tachometers. Used for checking RPM; provides instantaneous and continuous check on operating speeds of rollers, shafts and other rotating parts; indicates shaft RPM, feet per minute, total output and other essential production information. Allows machines to run at peak productive rate safely. Speeds changeovers to different types of production.

Jones Portable Hand Tachometers are continuous indicating, centrifugal movement, with guaranteed calibration. Lightweight, heavy-duty. Multi-range tachometer complete with 4" extension rod, convex and concave rubber tips, 12" circ. peripheral disc, centerpunch and carrying case . . . $60 FOB Stamford, Conn. Single range portables available in wide variety of ranges. Write for specifications.



JONES FIXED TEXTILE TACHOMETERS

Jones Fixed Textile Tachometers for permanent installations are continuous indicating over full-scale uniform 360° dial. Heavy duty, wide variety of ranges, and special dial indications. Specifications and prices upon request.

JONES MOTROLA

437 Fairfield Ave., Stamford, Conn.

John Thompson, superintendent of Pentucket Mills of M. T. Stevens & Sons Co., Haverhill, Mass., has resigned and **Russell Smith** has been promoted to succeed him.

Walter Goddard is resigning as superintendent of worsted dyeing and finishing at Lorraine Mfg. Co., Pawtucket, R. I., to succeed **Joseph W. Booth** as general manager of Paton Mfg. Co., Sherbrooke, Quebec.

C. H. Steadman, formerly of Roma, Ga., is the new office manager of the Summerville Mfg. Co., Summerville, Ga.

E. B. Blackwell has become superintendent of the newly-organized Yarn Specialties Co., Clover, S. C.

Charles Berlow has been made superintendent of the Carr Mfg. Co., rubber thread firm of Bristol, R. I.

J. A. Wooten has accepted the position of superintendent of Stonewall Cotton Mills, Stonewall, Miss. He was superintendent of Industrial Cotton Mills, Rock Hill, S. C.

E. W. Blackwood has resigned as assistant superintendent of Martel Mills Corp., Spartanburg, S. C., and has become assistant superintendent of Avondale Mills, Pell City, Ala., unit.

V. J. Thompson is now general superintendent of the Laurens Cotton Mills, Laurens, S. C., promoted from superintendent.

Men in Armed Services

Harold Wetherbee, vice president and former manager of Flint River Cotton Mills, Albany, Ga., has been transferred to Washington, D. C., to await assignment to a new naval station. He has been commanding officer at the naval center at Lenoir Rhyne College, N. C., naval training station, with rank of lieutenant (S.G.).

A. L. Butler, Jr., son of A. L. Butler, Sr., vice-president of Chatham Mfg. Co., Elkin, N. C., has been promoted from captain to major in QM.

Thomas A. Paxton, vice president of Southern Textile Machinery Co., Paducah, Ky., has been commissioned an ensign in the Naval Reserve and is stationed at Portsmouth, N. H., at the Naval Base there as assistant supply officer.

L. J. Ball, formerly secretary of Pepperton Cotton Mills, Jackson, Ga., before entering the Army, is now a captain and is stationed in North Africa.

Kelley Eugene Traynham, captain in Quartermaster Corps, of the Charlotte Quartermaster Depot, has been promoted to major.

James P. Kinard, formerly manager of the gray goods department of William Whitman Co., New York, has been promoted to the grade of lieutenant colonel in QM Corps.

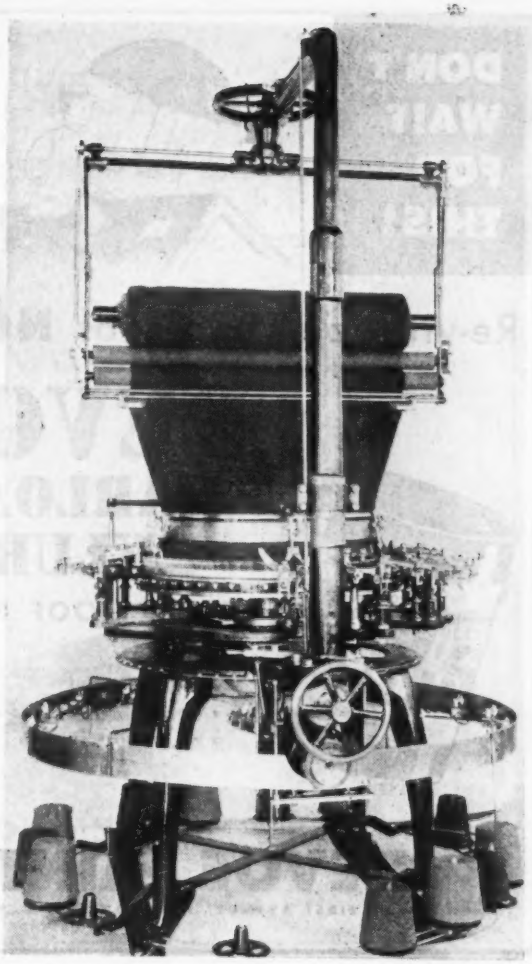
Benjamin P. Anderson, formerly manager of the suiting department of Riverside & Dan River Cotton Mills, Danville, Va., and a member of that company's merchandising committee, has been promoted to captain in the Quartermaster Corps. He is stationed at Washington, D. C.

James V. Tollison, assistant superintendent of Newton Rayon Mills, Newton, N. C., before entering the services of his country, is now an ensign in the Navy stationed at Camp Shelton, Va.

Paul F. Bissikummer, who, at the time of his enlistment, was employed as planner with

ERNEST W. HEWETT, Officer-in-Charge of Operations of the Government Owned Materials Branch of the Philadelphia Quartermaster Depot, who has been promoted to the rank of Captain. For 17 years prior to his military service, Captain Hewett was employed by the Goodall Worsted Co., Sanford, Me., holding position of production manager during the last years of his association with the firm.

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarn stop motion . . . and needle stop motion.

Install one of these machines today, and in a few hours after reaching the mill it will be ready for operation!

For details write us direct.

TOMPKINS BROS. CO., INC.
ONEIDA ST. SYRACUSE, N. Y.

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines
Needles
Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.
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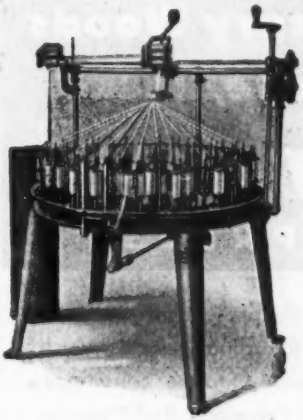

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NEBUTTCO

The Claim of Every NEW ENGLAND BUTT BRAIDER, Proved by Every Installation

Competition demands the utmost in the output of braiding machines. A machine that can deliver only partial efficiency eats the heart out of profits and sales. The braider shown here, the 65-carrier No. 1, is one of a large line of high efficiency machines manufactured by one of the oldest and most reliable manufacturers in the business. Write us for a complete catalog. New England Butt braiders can boost your sales by assuring dependable output.

NEW ENGLAND BUTT COMPANY
304 Pearl Street, Providence 7, R. I.

DON'T WAIT FOR THIS!

Re-vitalize your roof **NOW!**

DEVOE
KARLOAD KLUB
BLACK ROOF PAINT

- Defies the elements!
- Withstands rain, snow, sleet or burning sun...
- Will add LIFE to your roof!

OUR 190TH YEAR

DEVOE PAINT

787 FIRST AVENUE, NEW YORK 17, N. Y.

Where Ordinary Woods Deteriorate, Use

Tidewater
RED CYPRESS

THE high humidity constantly present in your production operations is fatal to ordinary woods, which quickly deteriorate under such extreme conditions. The use of the Heartwood of Tidewater Red Cypress, however, has proved itself practical and desirable. This Tidewater Red Cypress Heartwood withstands abuses to a remarkable extent and is, in fact, classified in the "Wood Handbook" of the U. S. Department of Agriculture as a species "durable even when used under conditions that favor decay."

Write today for full information about TIDEWATER Red Cypress.

SCMA **Tidewater Red Cypress** RED CYPRESS "The Wood Eternal"

Can be Furnished Promptly from St. Louis Stock

FLEISHEL LUMBER CO.

4235 DUNCAN AVE. • ST. LOUIS 10, MO. • NEwstead 2100

the Textile Machine Works, Reading, Pa., has just been commissioned a second lieutenant and has been graduated from the officers candidate department of the Transportation Corps School, New Orleans Army Air Base.

Warren O. Cobb, former Charlotte, N. C., manager of Arnold, Hoffman & Co., has been awarded the Bronze Star Medal "for heroic achievement in Italy." He ranks as captain.

James C. Levi, of Charlotte, N. C., is an Air Corps supply officer with rank of captain for a P-51 Mustang fighter base of the Eighth Air Force in England. Prior to entering the Army he was sales representative for Excelsior Mills Corp., Jacksonville, Fla.

George O'Keefe, recently a lieutenant, j.g., in the Navy, has been released to inactive duty and has resumed his work as purchasing agent for R. I. Wolfenden & Sons, Attleboro, Mass.

George W. Dobbins, Jr., son of the general superintendent of Pee Dee Mfg. Co., Rockingham, N. C., is reported by the War Department as missing over India.

Charles A. McKinney, first lieutenant in Army Air Corps pilot, son of **Thomas H. McKinney**, retired, formerly vice president and general manager of the American Yarn & Processing Co., Mt. Holly, N. C., and who served as chief of the WPB cotton yarn division in the textile, cloth and leather bureau, now missing in action, has been awarded the Distinguished Flying Cross.

Obituary

D. E. Sellars, 81, one of the founders of the Sellars Hosiery Mills, Burlington, N. C., and active in its management until ill health forced him to retire in 1943, died Sept. 2. Other business interests included Sellars Mfg. Co.; the old National Dye Works, now May-McEwen-Kaiser Co.; Long Full-Fashioned Hosiery Mills; Rufus D. Wilson, Inc., and the Morris Plan Bank. He was at retirement president of the bank and vice-president of the firm of B. A. Sellars & Sons, Burlington.

William S. Pepperell, 64, director of purchasing of the Carter Fabrics Corp., died at Greensboro, N. C., Sept. 10. He was also connected with Cleveland Cloth Mills, Shelby, N. C.; S. Slater & Sons, Slater, N. C.; and Stanley Mills, Stanley, N. C. A native of New Hampshire, he was with the Draper Corp., Hopedale, Mass., and the Warren Mfg. Co., Providence, R. I., before going to Greensboro eight years ago. At one time he was head of the purchasing department of the Burlington Mills Corp.

Dwight L. Armstrong, vice-president of the Armstrong Cork, Co., Lancaster, Pa., died Sept. 10. He was the son of Charles D. Armstrong, former president of the company, and grandson of Thomas M. Armstrong, its founder. He joined the company in 1919.

John Moodie, 85, founder of Eagle Knitting Co. in 1884, now the J. R. Moodie Co., Hamilton, Ont., died recently in Port Nelson, Ontario. Mr. Moodie retired some years ago.

John J. Twohey, a veteran silk merchant believed to be in his 80s, died recently at New Rochelle, N. Y. He was a prime mover in the International Silk Exposition held in the 20s, was one of the founders of the Textile Salesmen's Association, and member of the firm of Bentley & Twohey until his retirement about 10 years ago.

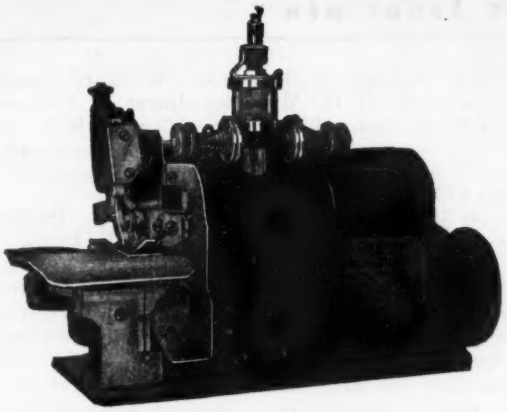
George J. Cushwa, 51, secretary of Roxboro Cotton Mills, Roxboro, N. C., died recently.

Thomas W. Bowron, 65, treasurer of Avondale Mills, Birmingham, Ala., a director of several concerns, and vice-president of First National Bank, Birmingham, died recently.

Will Sells, 62, secretary of Wiscassett Mills Co., Albermarle, N. C., died Aug. 24.

Richard P. Waters, 75, for many years engaged in the wool trade at Boston, Mass., until his retirement in 1934, died at Cohasset, Mass.

William S. Hennessy, 56,



MERROW HIGH SPEED

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

Produces Federal Specification Stitch
Types 501, 502, 503, 504 and 505

WAR WORK DEMANDS

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment
or Repair—Low Upkeep Costs

Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work — Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operaton of Machine.

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THE MERROW MACHINE COMPANY
STARTING ITS SECOND CENTURY

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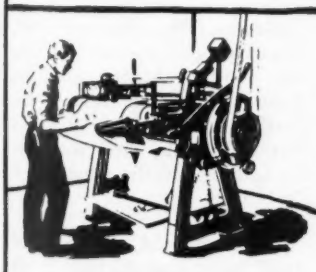
BINDINGS



from straight and bias fabrics produced at high speed on Camachine 40-3L.

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CRANE

KNITTING MACHINES
meet the need for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just ***WRITE***

1870 **CRANE** 1944

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

THE LOYAL T. **IVES** COMPANY EST. 1871

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

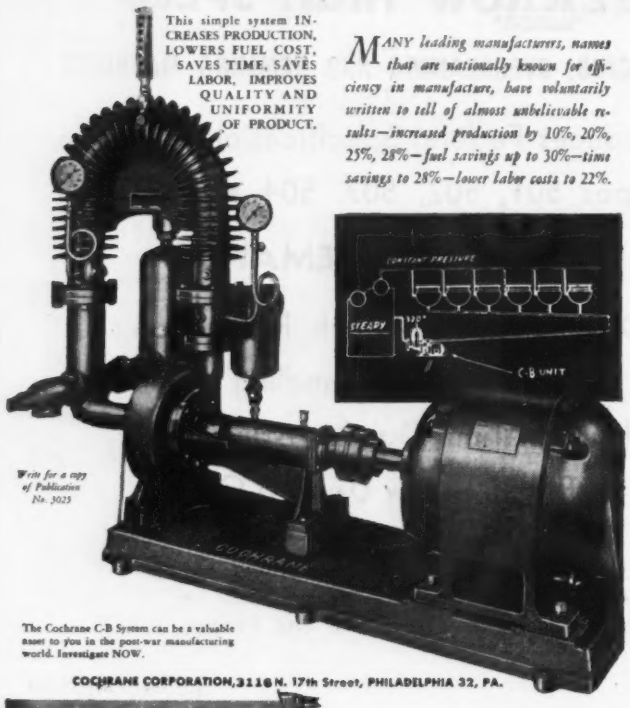
Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

This is the Heart of the COCHRANE C-B SYSTEM of High Pressure, High Temperature Condensate Return

This simple system INCREASES PRODUCTION, LOWERS FUEL COST, SAVES TIME, SAVES LABOR, IMPROVES QUALITY AND UNIFORMITY OF PRODUCT.

MANY leading manufacturers, names that are nationally known for efficiency in manufacture, have voluntarily written to tell of almost unbelievable results—increased production by 10%, 20%, 25%, 28%—fuel savings up to 30%—time savings to 28%—lower labor costs to 22%.



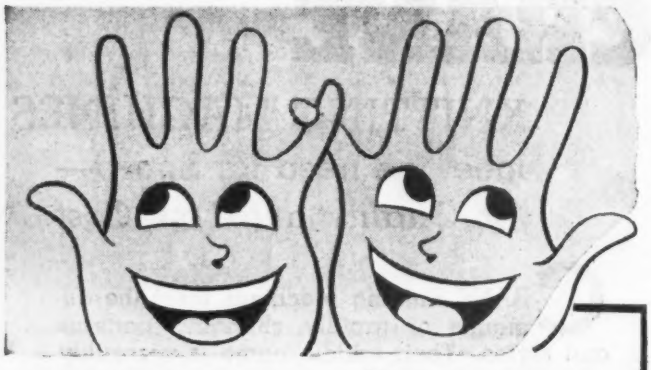
Write for a copy of Publication No. 5025

The Cochrane C-B System can be a valuable asset to you in the post-war manufacturing world. Investigate NOW.

COCHRANE CORPORATION, 3116 N. 17th Street, PHILADELPHIA 32, PA.

COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE



HAPPIER HANDS DO MORE!

It pays to be "*choosey*" when you buy hand cleansers. Let *dependable Finnell Quality* be your safeguard. All *Finnell* Hand Cleansers are guaranteed neutral . . . clean with absolute safety and gentle thoroughness.

Finnell Quality **HAND CLEANSERS**

HAN-KLEEN (1). A heavy duty powder for removing stubborn grease, grime, graphite, et cetera.

HAN-KLEEN (2). Also a heavy duty powder, but with vegetable base to meet certain State requirements.

HAN-SAN. A liquid soap. Rich-lathering. Economical . . . can be diluted with four parts water for some needs.

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1940 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

NEWS ABOUT MEN

for 13 years manager of the rayon department of H. W. Butterworth & Sons, Philadelphia, died recently.

Charles O'Neill, treasurer of the Lowell Shuttle Co., Lowell, Mass., died at Boston Oct. 2.

David M. Carpenter, 86, president and general manager of the former Maiden Cotton Mills and later president and general manager of Union Mills and Providence Mills, died recently at Maiden, N. C.

Carl H. Rupprecht, 59, general manager of the Pigments Department of E. I. du Pont de Nemours & Co., died Sept. 10, at East Orange, N. J.

Bruno A. G. Kayser, 60, operator of Kayser & Co., yarn merchants, died recently in Reading, Pa.

Harold R. Sawyer, 50, a partner in the Boston wool house of Forte, Dupee & Sawyer, died at Framingham, Mass., Sept. 9. He was born in Somerville, Mass.

Carl Peter Waldinger, founder and treasurer of the Chemical Mfg. Co., Ashland, Mass., and for 45 years prominent in the dye-making industry, died at Boston Sept. 10.

Robert J. McCormick, son of G. H. McCormick, secretary-treasurer, Riverside Silk Mills Ltd., Galt, Ontario, was killed recently while in action in France. He was Lieutenant in the Highland Light Infantry of Canada. He had prepared at Philadelphia Textile Institute, Philadelphia.

John M. Mauney, 25, associated with Washington Mills Co., Fries, Va., before entering the service, was killed in France on July 26. He was a veteran of three major military campaigns and the winner of the Distinguished Service Cross. He was a first lieutenant.

Pressley A. Stack, 22, son of S. L. Stack, superintendent of the Father George Mills, Sanford, N. C., was killed in a plane crash July 26, near Charleston, S. C. He was first lieutenant.

David H. Henry, connected with Union Bleachery, Greenville, S. C., prior to entering the Army, was killed in France July 11. He was graduated from the textile engineering department of Clemson College, Clemson, S. C., in 1936. He was a first lieutenant at the time of his death.

Lawrence A. Bearden, 19, son of M. A. Bearden, manager of Pomona Mfg. Co., Greensboro, N. C., has been killed in a plane crash in England. He was a sophomore at Clemson College, Clemson, S. C., when he enlisted in the Air Corps and held the rank of first lieutenant.

Milburn Gordon McCurry, 34, for 10 years superintendent of the printing department of the Rock Hill Printing & Finishing Co., Rock Hill, S. C., died Aug. 25.

Kilburn G. Pease, a former government textile inspector in Lawrence, Mass., was killed in action in France, July 7. He received textile training at Lowell Textile School, Lowell, Mass.

Buell B. Howard, 60, master mechanic at Gibson Cotton Mill, Concord, N. C., for 33 years, died Sept. 16.

Charles Noble Alexander, 54, for many years manager of Carter Mills, Lincolnton, N. C., died recently at his home in Marshville, N. C.

George W. Everett, 84, former superintendent of Trenton Cotton Mills, Trenton, Tenn., and at the time of his death, president of Citizens National Bank, died recently. He had lived in the same house 76 years.

L. Weiss, 54, overseer of wool yarn manufacture with Bigelow-Sanford Carpet Co., Thompsonville, Conn., died recently.

Mason Langston Copeland, 82, Laurens, S. C., for a number of years prominently engaged in the textile manufacturing business, died Sept. 3, at his home.

Philip Howard Scott, 52, a chemist associated with the Technical Laboratory of the Dyestuffs Division, E. I. du Pont de Nemours & Co., died in Wilmington, Del., recently.

Miss Minnie Fields, Greensboro, N. C., for many years social worker for the Proximity Mfg. Co., died Sept. 1, following more than four years of declining health.

2 STANDBYS FOR RAYON PROCESSING

V VIRGINIA

"VIRGINIA" (LIQUID) SO_2 THE IDEAL ANTICHLOR

A "natural" for rayon processing because low concentrations are highly effective.

★ removes active chlorine
★ neutralizes residual alkalinity
★ constant make-up by continuous flow

Shipped in steel cylinders containing 150 lb. net weight.

"VIRGINIA" (MONOHYDRATE) $ZnSO_4$ the high Zn content Zinc Sulphate prepared specifically to meet the purity standards of rayon processing.

— crystalline, free-flowing
— non-caking
— easily and quickly soluble

Packed in 100 lb. bags; 425 lb. bbls.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

THE STANDARD DE-SIZING AGENT

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Dependable, speedy and economical de-sizing . . . Our technical staff always at your service.

for cottons rayons and mixed goods

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D. R. KENYON & SON
RARITAN, N. J.

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ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps

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ALL STEEL ECONOMY BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.

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RED RAY RADIANT HEAT BURNERS SPEED UP DRYING OF THICK FELTED GOODS

A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.

WRITE FOR COMPLETE DETAILS

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Southern Representatives:
CAROLINA SPECIALTY COMPANY — **CHARLOTTE, N. C.**

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Adequate Testing pays 4 ways

Testing facilitates research, protects purchasing, promotes production and proves quality. Let the 60 models of *Scott Testers serve your testing needs for tensile, hysteresis, burst, crepeage, twist, flexing, etc.

SCOTT TESTERS

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NOVELTY-YARNS
For
WEAVERS-KNITTERS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

NEWS ABOUT Mills

Cotton Mill News

Alabama Mills, Birmingham, Ala., board of directors has formally approved the sale of its units at Jasper, Russellville, and Haleyville, all in Alabama, to the Crescent Corp., of Fall River, Mass.

Asheville Cotton Mills Corp., Asheville, N. C., has sold 45 houses which it owned and rented to its employees, the employees taking them over under a special arrangement under which the houses are to be paid for within six years and nine months.

Cheraw Cotton Mills, Cheraw, S. C. has recently completed additions to the main office building, which includes fluorescent lighting, sound absorbing materials, heating and cooling devices, electrical refrigerated drinking fountains, and other conveniences.

Cramerton Mills, Inc., Cramerton, N. C., have built and equipped a community cannery which has been in full operation.

R. J. Ederer Co., 548 New Orleans St., Chicago, Ill., manufacturer of cotton and linen netting, etc., has begun construction of a three-story addition, 45 x 81 ft., for which general contract recently was awarded to Alexander Hendry Co., Chicago. Cost about $100,000 with equipment. This is part of expansion program, previously reported for production for government.

Hannah Pickett Cotton Mill, Rockingham, N. C., stockholders meet Sept. 22, to ratify sale of mill to Sacfit Bros., of New York, at a price of $2,880,000. An arrangement is being made, it was announced, whereby W. B. Cole and his family, who own 800 of the 2,000 shares, will retain and operate Mill No. 2, built in 1922 as the Leak Mill. The original Hannah Pickett Mill, No. 1, was started in 1906. It now contains 77,000 spindles and 2,200 looms.

The Kendall Co., Colrain, Mass., plans early rebuilding of portion of local mill, recently damaged by fire, with loss reported about $30,000.

Pepperell Mfg. Co., Lindale, Ga., has begun construction of new waste disposal plant at local mills, for which contract recently was let to Ledbetter & Johnson, Rome, Ga. Engineers are Robert & Co., Atlanta, Ga.

Poulan Cotton Mill, Poulan, Ga., has been purchased by W. F. McCanless, of Salisbury, N. C., who will manufacture yarns. F. M. Kimble, who has been general manager of the Poulan Cotton Mill for several years, will continue in that capacity, and S. W. Patterson will remain as superintendent.

Rocky Mount Mills and the Rocky Mount Cord Co., Rocky Mount, N. C., are installing a public-address system over which musical programs will be given for the benefit of the operatives.

Saratoga-Victory Mills of Alabama, Albertville, Ala.—An option on this plant has been taken by M. Lowenstein & Sons, Inc., which, if assumed, would mark the operation by the Lowenstein converting organization of a gray goods mill, in a vertical set up. The company at present operates its own finishing plant, the Rock Hill Printing & Finishing Co., at Rock Hill, S. C. Saratoga Victory Mills operate at Albertville 40 cards, 16,000 spindles and 540 looms; and at Guntersville 40 cards, 16,000 ring spindles and 536 looms.

Whitener Spinning Mills, Inc., Lincolnton, N. C., have been purchased by M. D. Haney, Spindale, N. C., and associates, and have been reorganized as the Lincoln Yarn Co. Mills have been operating 1,296 spindles on coarse yarns and 204 speeder spindles on roving yarns.

Machines that Keep Running are Good Ones to have...

BARBER-COLMAN Automatic Spoolers and Super-Speed Warpers are designed and built to "keep running." The less time a machine is down for repairs or service, the more it can produce. Production without let-up is especially important in these war years, because of the great and steady demand for vital war fabrics. Operators like machines that keep running, because that cuts out needless waste time in their working hours. Mill owners and executives like machines that keep running, because that helps to maintain the mill at top efficiency. We suggest you check the records on lost time on Barber-Colman machines. The figures will show how the long life and high quality that is built into Barber-Colman equipment pays off in the form of minimum time lost for service or repairs.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

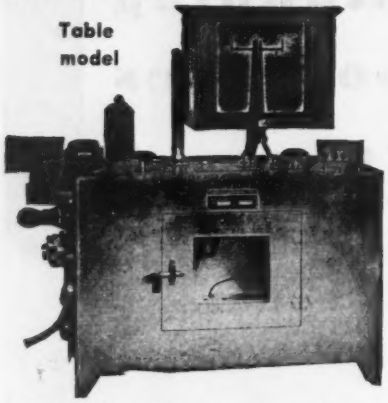
BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

KNITTERS—

Table model



Eight-Basket Oven—Can be equipped with 8 Baskets—3" x 3" square, and 6" deep; or with 6 Baskets, 4¼" x 4¼" and 6" deep. Sets on table in space of 20" x 40".

Check Yarn Samples for Moisture

Test all your yarn, stock in process, and finished goods—for moisture content — with accuracy. Weighing can be made without opening the oven door.

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Equipped with baskets to fit the work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.

177 Tremont St., Melrose 76, Mass.

WALKER

MANUFACTURING COMPANY, INC.
ATLANTIC & RUTH STS., PHILA. 34, PA.

WALKER LOOM HARNESS

HEDDLES • HEDDLE FRAMES • REEDS

R. T. OSTEEN, Southern Mgr., Greenville, S. C.

Greenville Textile Supply Co. . . Greenville, S. C.
Odell Supply Co. . . . . Greensboro, N. C.
American Supply Co. . . . . Providence, R. I.
Hendrik VanBroderode . . . . Midland Park, N. J.
Matthews Equipment Co. . . . Providence 3, R. I.
R. D. Hughes Sales Co. . . . . Dallas, Texas

Simplified DESIGN
Flexible POWER
Better EVAPORATION
More sensitive CONTROL

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

Wool Goods Mill News

Abbot Worsted Co., Graniteville, Mass., has begun erection of a two-story and basement addition, 40 x 100 ft., at branch mill at Forge Village, Mass., for which general contract recently was let to Casper Ranger Construction Co., Holyoke, Mass. Cost reported close to $100,000, with equipment. Whitman & Howard, Boston, Mass., are engineers.

Artex Woolen Mills Ltd., Hespler, Ontario, is building an addition, 60x140 ft., one story, to be used temporarily as a warehouse. It is expected that spinning equipment will be installed when machinery is available.

Burrard Woolens, Ltd., Lombard Bldg., Winnipeg, Manitoba, is considering early construction of new one-story mill at Vancouver, B. C., reported to cost close to $50,000, with equipment.

Charlestown Woolen Mill, Charlestown, N. H., engaged in spinning for lease-lend goods, has been sold by the Keene Silk Fiber Mills, Keene, N. H. The new owners are L. Lewis, former part-owner and superintendent of the Gilsum Mills, Gilsum, N. H., who will act as manager of the Charlestown plant, and A. E. Bernstein, who will represent the firm in New York. The concern's name has been changed to Connecticut River Mills.

Collins & Aikman Corp., Norwood, N. C., has work under way on alterations and improvements in local mill, for which general contract recently was awarded to George W. Kane, Jefferson Bldg., Greensboro, N. C.

Goodall Worsted Co. and **Sanford Mills**, Sanford, Me., have been sold to Union Securities Corp., W. C. Langley & Co., and associates of New York and Boston. Elmer L. Ward, of the Goodall Sales Subsidiary, will head the management of both companies.

Limerick Yarn Mills, Portland, Me., has commissioned Architect Norris W. Corey, Manchester, N. H., to prepare plans for alterations.

Sun Textiles Ltd., recently established a plant in Lansing, north of Toronto, Ontario, for production of woolen yarns. It is being operated by W. R. Briggs.

Rayon & Silk Mill News

Braitex Mfg. Co., East Norwalk, Conn., recently chartered with capital of $10,000, plans operation of mill in this vicinity for manufacture of rayon fabrics. Maurice F. Geraghty, 37 Schiller St., Chicago, Ill., is principal incorporator.

Burlington Mills Corp., Burlington, N. C., has organized a subsidiary interest to operate in Australia. A former munitions plant at Rutherford, N.S.W., has been leased from the Australian Government, and will be remodeled and equipped for weaving mill for rayon fabric manufacture. It is understood that this will be a postwar development.

Carter Fabrics Corp., plans a 50% expansion of the unit at South Boston, Va. Necessary machinery is on order and construction will begin as soon as WPB can release critical materials. W. J. Carter, president of the company said that the enlargement "will enable us to take care of all our present employes, give employment to those who have left us to go into the armed forces, and further employment to others . . ."

Canadian Celanese Ltd., Drummondville, Que., is making progress on the construction of its new plant which when ready for production will represent an investment of nearly $5,000,000. The new products of the enlarged plant include Lumarith, one of the newer plastics, as well as rayon fabrics.

Courtaulds (Canada) Ltd., Cornwall, Ontario, plan to erect a new unit for manufacturing rayon staple fiber on land adjacent to its present viscose rayon yarn plant. Expected capacity of new plant will be 8 to 10 million pounds annually. Erection will not begin until the pressure of war demand for building materials has lessened.

Kentucky Looms, Louisville, Ky., were partly gutted by fire on Aug. 25 with loss exceeding $70,000.

Skenandoa Rayon Corp., Utica, N. Y., now an interest of St. Regis Paper Co., 230 Park Ave., New York, N. Y., which recently acquired a controlling interest, has tentative plans under way for postwar

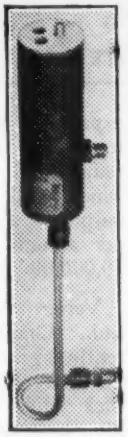
Proper Humidity is All-Important!

FOR YOUR MATERIALS
Air, dried by winter heating, robs textiles of many qualities, causes costly damage.

FOR YOURSELF
Dry air is unhealthy — causes colds — illness — absenteeism — reduces efficiency!

SKILBECK HUMIDIFIERS protect

Low in cost—easy to install—yet efficient and dependable. Ends dry air danger. Fits steam, hot water and vapor systems. Write for complete information.



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Please rush complete humidifier information to
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Address .....
City ..... State.....

TYPE OF HEAT
☐ Steam
☐ Hot Water
☐ Vapor

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A penny postcard will do—but please indicate your *old* and *new* address, and any new company connection or position.

TEXTILE WORLD
330 West 42 Street New York, N. Y.

Style 27

LANE BASKET TRUCKS

Smooth - Light - Durable

Designed for
All Textile, Garment, and
Many Other Industrial Plants

W. T. Lane & Bros., Inc.
Mfrs.
Poughkeepsie, N. Y.

SEARCHLIGHT SECTION

POSITIONS VACANT

TEXTILE ENGINEER with chemical background wanted to take charge of formulation, design and quality control for the production of high quality asbestos textiles. This is a field which will develop rapidly. Research, development and quality control work. Old established company. Post-war security. W.M.C. certificate required. Please give full history, photograph, and salary desired in first letter. Cotton or wool carding experience valuable. P-950, Textile World, 330 W. 42nd St., New York 18, N. Y.

MANUFACTURER OF coated fabrics wants well qualified man to develop new market. Plastic Fabrics Division, The Western Shade Cloth Co., 22nd & Jefferson Sts., Chicago 16, Ill.

WANTED: DRAFTSMAN, experienced on Textile Machinery preferred. Write stating experience, age, education and other qualifications to P-970, Textile World, 330 W. 42nd St., New York 18, N. Y.

WORSTED CARDER and comber small plant. Wonderful opportunity. Strictly confidential. P-971, Textile World, 330 W. 42nd St., New York 18, N. Y.

DRAFTSMAN-DESIGNER for small progressive plastics manufacturer in northern New Jersey. Excellent post-war future. Write giving complete details. P-972, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED CARDER and comber on worsted yarn. Mail full details in first letter. P-981, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE INSTITUTE graduate. Twenty-five years executive experience wool and worsted, private concerns and government. Desires change in executive capacity. P-914, Textile World, 330 W. 42nd St., New York 18, N. Y.

NYLON HOSIERY tram throwing. Post-war plans of a large hosiery mill. A technical and practical superintendent of modern throwing desires to contact a hosiery mill contemplating their own nylon throwing department. Married, age 38, location no object. PW-913, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 222)

WANTED

Knitting Machine Fixer

Good salary and excellent opportunity at Virginia plant of nationally known AAA1 Company Must be experienced on Wildman Circular Spring Beard needle machines, models FBSS and FBSS-6. Applicant should have personality that will qualify him for supervisory position. *Write in detail.*

P-968, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

MANAGER FOR NARROW TEXTILE MILL IN VIRGINIA. Essential industry. Operations include warp sizing and weaving. Narrow textile experience desirable but not essential.

Excellent opportunity for the man who is seeking a secure position with a responsible and well established concern.

Write fully, stating experience, age, education, salary requirements, etc.

P-941, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE COLORIST

WANTED

Colorist, Chemist, thoroughly experienced, capable to mix vats, directs, and acid colors etc. for Screen Printing on all types of fabrics. State in detail all your qualifications age, and experience. Splendid opportunity for the right man.

P-957, Textile World
330 West 42nd St., New York 18, N. Y.

POSITION VACANT

TECHNICAL EDITOR

For textile magazine. Must have exceptionally good command of English. Write experience and salary required.

P-854, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

FIXERS

for Scott & Williams and Acme Hosiery Knitting Machines
Steady Employment

P-938, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-932, Textile World
330 West 42nd St., New York 18, N. Y.

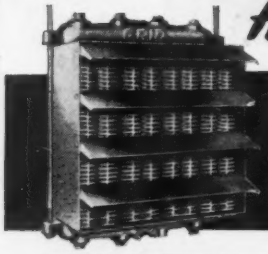
LOOM FIXER WANTED

Wanted Automatic loom fixer on C&K, 100 inch W 3 Automatics and 100 inch intermediate Automatics, first shift, eastern Penna.

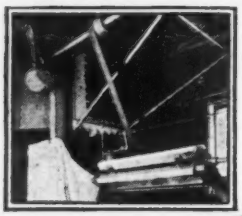
P-959, Textile World
330 W. 42nd St., New York 18, N. Y.

Additional Searchlight Advertising on pages 222-229

Here's Maintenance Free Heating Service-



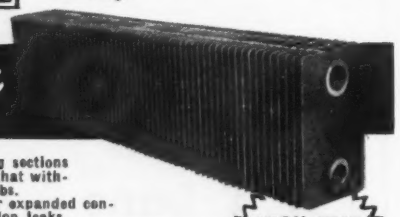
LINT OR PARTICLES IN AIR DO NOT PLUG IT UP!



Because of their open design, GRID Unit Heaters are practically self-cleaning over the entire heating surfaces; that's why lint or particles in the air do not plug them up.

Illustrated is a GRID Unit Heater installed in a textile mill for the correction of fog condition (another use for GRID Units), as well as heating.

Here's why



- One piece construction heating sections (patented) of high test cast iron that withstand steam pressures up to 250 lbs.
- No soldered, brazed, welded or expanded connections to become loose or develop leaks.
- No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

Is it any wonder that GRID Unit Heaters outlast other types of heating equipment, without maintenance expense? They are built to last, as is proven by the many textile mills that have operated them continuously for as many as 13 years. Install GRID Unit Heaters for permanency. Complete data and capacity tables upon request.

HIGH TEST CAST IRON HEATING SECTIONS

GRID

D. J. MURRAY MANUFACTURING CO.
Wausau, Wisconsin

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS SPECIAL REPORTS

GREENVILLE, S.C. FALL RIVER, MASS.

PENETRANTS • DETERGENTS
REPELLENTS • SOFTENERS
FINISHES

BURK-SCHIER

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE

expansion and improvement, to include several new processing and production units which will increase present output of about 8,000,000 lb. per annum to approximately 20,000,000 lb.

Verney Mills of Canada, Ltd., Granby, Quebec, recently organized as a Canadian subsidiary of Verney Brunswick Mills, Inc., Brunswick, Me., have taken over mill and property of Carl Stohn of Canada, Ltd., at Granby. Plans are under way for expansion and improvements in plant, including installation of about 250 new looms, and a complete spinning unit. Also additional dyeing and finishing equipment. Estimates of cost and details will be determined in near future. L. Nelson Thompson, manager of the Carl Stohn plant, continues as plant manager of the new company. Robert Kiely continues as sales manager with offices in Montreal, Que.

Whittenton Mfg. Co., Taunton, Mass., recently acquired by Loomcrest, Inc., and now operated as a unit of that organization, proposes to concentrate manufacture on spun-rayon blends after the war. Increased production will be carried out as a postwar development.

Knitting Mill News

Astor Knitting Mills, 1712 North 10th St., Reading, Pa., has begun operation. The firm manufactures sweaters and bathing suits, and has a government sub-contract which will furnish employment to 50 people over six months. Chas. S. Hyman is the president.

Barry Knitting Mills, Inc., Long Island City, N. Y., care of Abraham S. Wilk, 123 William St., New York, attorney and representative, recently organized with capital of $10,000, plan operation of local mill for manufacture of outerwear specialties.

Batesville, Miss. — Town Council, Batesville, is arranging bond issue of about $60,000, for erection of a one-story building, to be leased to a manufacturer of hosiery, name temporarily withheld, for a local knitting mill. Plans will be prepared soon.

Bridgway Knitting Mills, Springfield, Mass., recently organized, has leased second floor of building at 105 Bridge St., and will improve and equip at once for mill for manufacture of outerwear. New company is headed by V. T. Cammarato, formerly connected with Myrtle Knitting Mills, Unionville, Conn.

Constant Hosiery Co., 1622 West North Ave., Milwaukee, Wis., has awarded contract to Frank Stelzl & Sons, Inc., Milwaukee, for alterations.

Glove Knitters Inc., Montreal, Que., has rented the Guillet plant in Marieville, Que., and has installed about 20 circular knitting machines for the production of fancy woolen gloves. It is the plan of the firm to enlarge the new mill when machinery and labor can be more easily obtained. The Montreal plant operates 60 knitting machines on gloves and scarves.

Holly Ridge Textile Mill Corp., Holly Ridge, N. C., has been incorporated with subscribed stock of $53,500, to operate a sweater and hosiery mill and will employ between 400 and 500 workers. Incorporators are: N. H. Modinos, William Kneller, L. A. Bryan, O. V. Radicky, L. E. Colburn, and Herman Parker. A plant is to be constructed and machinery will be furnished by the All-Colony Woolen Mills of Mount Airy, N. C., which burned five months ago. In addition, 60 or 80 additional knitting machines will be purchased.

S. Lennard & Sons Ltd., Dundas, Ontario, recently started the erection of a two-story plant extension, 80 x 35 ft., with concrete foundation and brick walls. The first floor will be used for a lunch and rest room for the employees, and a modern boiler plant.

Lewis Ltd., Truro, N. S., will build an extension, two-storys in height, 168 x 60 ft. The first floor will be used for full-fashioned hosiery knitting. The second floor will accommodate 3,500 worsted spinning spindles of the Bradford type. Modernization of the steam plant will include the erection of a wing, 23 x 74 ft. to the existing building. The new plant will have two boilers with a peak capacity of 33,000 lb. of steam per hour.

McGaugh Hosiery Mills, New Braunfels, Tex., are considering a postwar expansion

A Peek at the Underwear Future

"Knitted underwear business in postwar," says a leading retailers' newspaper, "is expected to overshadow any past or present activity in scope of style and actual selling. It is foreseen that knitting mills will spring into action as soon as possible in order to take advantage of the increased consumer demand."

Are your knitting machines ready to "spring into action" and keep up the pace? They *must* be in good condition to fill the gap until new machines are available. Scott & Williams offers you a practical plan to keep them operating efficiently and ready to meet the stiff competition. This plan includes a thorough survey—free, of course—of their condition by an experienced S & W service engineer . . . and a complete reconditioning with S & W parts.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point, N. C., offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

Take this opportunity now to lower your postwar production costs and at the same time improve your competitive position.

A note from you will bring our representative to discuss this S & W maintenance service in greater detail.

ESTABLISHED 1865

SCOTT & WILLIAMS

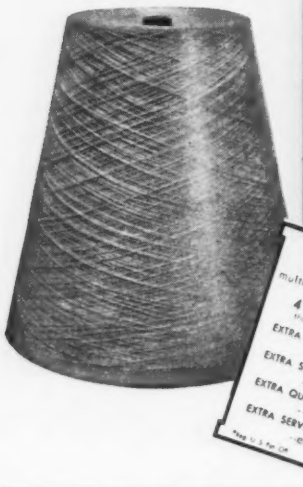
INCORPORATED

BUY WAR BONDS FOR VICTORY

EMPIRE STATE BUILDING NEW YORK 1, N. Y.

SOUTHERN SALES OFFICE: HIGH POINT, NORTH CAROLINA

AMERICAN



. . . more economical to use because . . . .

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

Sales Manager, E. F. REDDING, MOUNT HOLLY, N. C.

CHATTANOOGA, TENN.
Mr. Tom Moore
736 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

★ ★

J. E. SIRRINE & CO.
GREENVILLE • SOUTH CAROLINA

Engineers
for more than 40 years

TEXTILE MILLS • CHEMICAL PROCESS PLANTS
PULP & PAPER MILLS • WASTE DISPOSAL
STEAM POWER PLANTS • STEAM UTILIZATION
WATER • APPRAISALS • PLANS • REPORTS

CHAPMAN
STATIC
NEUTRALIZER©

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

program, including new one-story addition, to be equipped for manufacture of nylon hosiery for women. Cost reported approximately $100,000.

Moljo Knitwear Corp., New York, N. Y., care of Morris Berler, 32 Broadway, attorney and representative, recently organized with capital of 200 shares of stock, no par value, plans operation of local mill for production of outerwear.

Newlands & Co., Galt, Ont., is planning a general modernization of its buildings and machinery. Plans call for demolition this year of two old buildings and erection of a modern three-story building, 100 x 65 ft. Further additions will be made in 1945.

Norfolk Knitters Ltd., Pt. Dover, Ontario, has been sold by J. Alec Innes, proprietor to F. J. H. Thornton who is now operating same.

Penderlea Hosiery Mills, Penderlea, N. C., has been sold by FSA Administrator Frank Hancock to the Dexdale Hosiery Mills, of Lansdale, Pa., for $603,619. The new owners, who already owned the majority of stock in the project, will continue to operate it.

Rockwell Hosiery Mills, Inc., Rockwell, N. C., lately chartered with capital of $100,000, plans early operation of local mill for production of women's hosiery. Julius Peeler and J. H. Sides, Rockwell, are principal incorporators.

York Knitting Mills, Ltd., Toronto, Ont., recently purchased the old Woodstock Rubber Co. building in Woodstock, Ont. The plant will be used after the war.

Valley Knitting Mill, Pottsville, Pa., has been acquired by S. Handel & Sons, Inc., 2 West 29th. St., New York, N. Y.

Processing Plant News

American Dyeing Corp., Fiskdale, Mass., has work under way on new boiler house at mill, 50 x 80 ft., for which general contract recently was awarded to F. X. Laliberte & Son, Inc., Southbridge, Mass.

Chester Finishing Corp., Paterson, N. J., care of Charles R. Turndorf, 262 Main St., Paterson, attorney and representative, has been chartered with capital of 1000 shares of stock to operate a local dye, bleach and finishing mill.

Rapid Dyeing & Spraying Corp., New York, N. Y., care of Irving Jacobskind, 170 Broadway, attorney and representative, has been incorporated with capital of 200 shares of stock to operate a textile dyeing and finishing mill.

Slater Dyeing & Finishing Co., Pawtucket, R. I., has changed its name to Slater Dye Works. The firm is in the business of finishing cotton and rayon fabrics.

Union Bleachery, Greenville, S. C., has awarded contract to the Daniel Construction Co., Greenville, S. C., for improvements in its village.

United States Finishing Co., Norwich, Conn., has let general contract to A. Dierks & Co., Inc., Brooklyn, N. Y., for extensions and improvements in boiler house at mill, including installation of additional equipment. Cost about $50,000. Westcott & Mapes, Inc., New Haven, Conn., are engineers.

Woods Mfg. Co. Ltd., Hull, Quebec, is building a one-story addition 195 x 40 ft. to provide accommodation for waterproofing cotton fabrics.

Miscellaneous Mill News

Approved Flax Co., Clear Lake, near Eugene, Ore., plans rebuilding of portion of spinning mill recently destroyed by fire, with loss about $40,000, including equipment.

Morrison Warp Co. is a newly established mill in Pawtucket, R. I. Hugh Morrison, formerly superintendent of the Unity Warp Co., is president. The new company will occupy 2800 sq. ft. of floor space.

National Linen Mills is the firm name under which Jack J. Sokolsky has published a certificate that he is conducting business at 122 East Seventh street, Los Angeles, Calif.

Southern Asbestos Co., Charlotte, N. C., will make extensions in mill for increased production for government

DYED ACETATE RAYON! *finished with* ARIPEL-FS

Reg. U.S. Pat. Office

Has Excellent Fastness to Atmospheric Gases

Yes, acetate rayon dyed fabrics treated with double-action ARIPEL-FS are remarkably resistant to the fading action af atmospheric gases as proven by the "Gas Chamber" test.

ARIPEL-FS is also an effective softener and therefore works two ways in a one bath treatment —

- **Increases the gas-resistance of the color.**
- **Imparts a soft, smooth pleasing finish.**

ARKANSAS CO. INC.

Manufacturers of Industrial Chemicals for over 40 Years

Newark, New Jersey

SEARCHLIGHT SECTION

(POSITION WANTED)

TEXTILE TECHNOLOGIST

Fabric development specialist desires position with aggressive firm. Has designed materials now meeting the test of service throughout the world. Can follow through, from laboratory research to weaving operations and beyond. Experienced with both natural and synthetic fibers, and with latest finishes.

PW-955, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

(Continued from page 217)

NYLON — RAYON — silk throwing. Hosiery tram throwster desires position as superintendent or assistant. 12 years of technical and practical experience in modern throwing. Nylon a specialty. Location no object. Married, age 38, presently employed but desire a change. PW-912, Textile World, 330 W. 42nd St., New York 18, N. Y.

MILL MANAGER cotton yarns wants position. Would welcome the opportunity to manage an inefficient operating mill on a bonus basis. 25 years practical and technical experience producing corded, combed and blended yarns. At present employed as supt. 45 years old. N. E. preferred. PW-973, Textile World, 330 W. 42nd St., New York 18, N. Y.

PRACTICAL RAYON throwster. Wide experience in the throwing field—capable organizing large or small throwing departments. Age 43 years, married, 1 child. PW-975, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON TECHNOLOGIST now holding responsible research position would be interested in connection with cotton mills to supervise fiber research and developmental work. Years of experience with raw cotton and spinning tests. Also qualified to work with flax, ramie, and synthetic fibers. Advanced technical training. Excellent references. PW-976, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT. Textile School graduate 40 years of age, married, 15 years experience in silk rayon and cotton desires change. PW-977, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE BUYER: Interested in making connection with high grade manufacturer of ladies full fashioned and seamless hosiery or underwear. Twelve years purchasing experience on all types of yarns including nylon, fabrics, and equipment. Age 37. PW-978, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

AS MANAGER, assistant Manager or Superintendent of Textile plant. Over 20 years technical and practical experience in cotton yarn industry including position as Superintendent and Manager cotton yarn finishing plant. Experience includes personnel management, mill maintenance, purchasing and production. Have wide knowledge of spinning, weaving, knitting and processing. North Carolina State College Textile School graduate in Textile Manufacturing. Age 45. Outstanding references. PW-979, Textile World, 330 W. 42nd St., New York 18, N. Y.

REPRESENTATIVE WANTED

SALES REPRESENTATIVES wanted. Individual or manufacturers agents having established contact with heads of Textile Mills. Must have good business record and reference. To work with our established factory representatives in Atlanta, Ga., Greenville, S. C., Charlotte, N. C., and Virginia. Training for contracting for industrial air conditioning will be given by our factory and field men. Mechanical knowledge helpful but not necessary. Steamaire Company, Cincinnati 2, Ohio.

REPRESENTATIVE AVAILABLE

TO REPRESENT firm selling equipment or materials to Textile Mills in Southern States. 22 years experience in cotton textile industry. Textile School graduate. Experience includes Field Service Technical work to weaving and knitting industry. Also Superintendent yarn finishing plant. Have had experience with weaving knitting and processing equipment. Age 45. Born and educated in South. Married. Best references. RA-980, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON YARN MANUFACTURERS

I would like to contact cotton yarn manufacturer who is interested in selling to the copper wire industry. Have large clientele among this class of trade. Can sell output of sizeable mill. Best of references.

RA-954, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

THREAD SALESMEN

Young men to represent a well-known manufacturer of Nylon and high-grade cotton thread in the following general locations: Chicago district, Cleveland district, New York and Philadelphia districts. State age, qualifications and selling experience if any.

SW-966, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Aggressive Manufacturers Agent

with excellent contacts desires quality product to sell to automotive industry. Company should have possibilities of producing item in large volume.

RA-967, Textile World
520 North Michigan Ave., Chicago 11, Ill.

ATTENTION YARN MILLS

Looking forward to the approaching post-war Era, capable and reliable Yarn Agent in close contact with knitters and weavers as well as others, desires sales representation in New York and New Jersey for immediate or post-war business. Personal interview desired.

RA-964, Textile World
330 W. 42nd St., New York 18, N. Y.

To MANUFACTURERS of FABRICS

Experienced Textile Agent capable and reliable wants to contact manufacturers of fabrics in making preparations now for the sale of their line after the war, in New York. Immediate offerings would be appreciated.

BO-963, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

back numbers of this journal as follows:
July **for year 1942.**
June to August **for year 1943.**
February **for year 1944.**

INDIAN JUTE MILLS ASSOCIATION
Imperial Institute London, S.W. 7, England

WANTED

Cidega or Ruf

54" knitters

W-956, Textile World
330 West 42nd St., New York 18, N. Y.

PLUSH LOOMS WANTED

Or will purchase or lease entire small plant. State type looms and other equipment.

W-962, Textile World
330 West 42nd St., New York 18, N. Y.

EXPORTER

wants reliable source of supply for

Rebuilt Machinery

W-965, Textile World
330 West 42nd St., New York 18, N. Y.

L. J. McCAFFREY & SON

FOR SALE

HEDDLE FRAMES

14" WORSTED FRAMES

METAL END	WOOD END
300—58"	538—70"
208—68"	31—76½"
240—70"	169—78"
50—71"	144—80"
56—80"	120—80½"
418—81"	95—81½"
182—85½"	11—88"
35—91"	24—98½"
	70—99¼"
	52—105½"
	16—110½"

10"-12" COTTON FRAMES

METAL END

10" FRAMES		12" FRAMES
741—44"	300—38"	338—64"
430—58"	1000—39"	3561—66"
315—61½"	700—40"	696—67"
958—62"	3200—41"	200—68"
400—64"	200—50"	2500—77½"
600—66"	360—56"	31—78"
1879—68"	1700—62"	114—88"—Wood
185—69"—Wood	300—62½"	

3000 = 44 x 12½"—Metal End—Silk
497 = 48 x 12½"— " " — "
200 = 66 x 12½"— " " — "
25 = 72 x 16" — " " —

BOX 495 PAWTUCKET, R. I.

WANTED

HYDRAULIC CALENDER, 60" wide, at least 50 ton pressure.

BUTTON BREAKER, 60" wide, heavy duty.

W-969, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Facing Calender Two Paper Rolls. One Center Steel Roll Steam Heated. Good Condition.

TEXTILE COATING CORPORATION
17 Forrest Street, Brooklyn

C. M. A. DRAFTS AND NOTICES

save you money on your
COMMERCIAL COLLECTIONS
Sent free, write
CREDIT MERCHANTS' ASSN.
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Solicitors Wanted

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Consulting Service

for
MANUFACTURERS AND USERS OF FIBERS AND TEXTILE PRODUCTS ON FIBERS PRODUCTS PROCESSES ENGINEERING

Box 37, North Scituate, Rhode Island
P. O. Box 494, Newark, Ohio

Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

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How ◂MLC▸ CAN HELP *solve 2 of the* BIG *problems of* RECONVERSION

YOUR problems are to SELL your surplus equipment—and BUY replacements for changeover to peacetime production—and do both FAST!

In *Equipment Reconversion,* ◂ MLC ▸ saves you weeks or months of valuable time reaching buyers for what you *don't* need and getting you what you *do* need . . . at fair-to-everybody, sound market prices. As experienced Dealers in dependable used Textile Machinery, ◂ MLC ▸ stands ready to help you solve difficult EQUIPMENT problems in the days just ahead.

Let MLC *help you speed your Equipment Selling and Buying!*

2—92" D & F Warpers with Beamers
3—46" x 52" Button Breakers
1—42" Butterworth 3-Roll Friction and Rolling Calender, motor driven
1—60" D. & F. 2-cyl. Iron Shoddy Card
1—54" American Coating Machine
1—Complete Set Combers including:
1—Whitin Ribbon Lapper
1—Whitin Silver Lapper
8—Whitin Model "C" Combers
1—72" P.&W. Semi-Decating Machine, complete with Nash Pump and Motor, cylinder 12" dia. by 72" face.
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—60" Windle Doubling Machine, Motor Dr.
1—68" P.&W. Doubling Machine, Mtr. Dr.
1—46" Windle Doubler
1—60" Windle Doubler, Winder and Measurer
1—6 Delv. Whitin Drawing Frame with 12" coiler
1—4 and one 6 delv. H & B dr. frame
1—40" Power Duster
1—28" Stick Klauder Weldon Skein Dyeing Machine
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300 lb. machine, extractor and winders
1—Laboratory Hydro Extractor
1—28" American Laundry belt driven extractor
1—40" American Tool underdriven Copper basket belt driven extractor

3—Smith & Furbush All-iron Card Sets, 48" wide, taking off 60 ends

2—Hunter No. 10 Fulling Mills
9—40" C&M 42", 46", 100 Folding Machines
1—52" James Smith Card Grinder
8—1200 h. Halton Jacquards, 9" lift
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
8—17 ft. Fletcher Victory Web Looms, 12 space, 1942, with numerous parts and supplies
50—76" Reed Space 2 x 1 Draper modified D Auto. Looms, 20 harness; motor driven
13—82" Reed Space 2 x 1 Draper modified D Auto. Looms, 20 harness, motor driven
43—82" Stafford 1 x 1 automatic Looms, 20 harness, motor driven
18—82" C & K 4 x 4 25 Harness motor driven woolen looms
1—½ HP G.E. Induction Motor
1—90" D.&F. Single Acting 14 Roll Napper
1—90" P.&W. Napping Machine
1—40" Furbush Mixing Picker
2—40" H & D Single Process Pickers
30' H. W. Butterworth Pin Tenter, 120" opening, Mtr. Dr.
1—28" Mixing Picker
1—Wm. Schofield Rag Picker
1—30" D & F Mixing Picker

1—24" Parkhurst Burr Picker
1—66" Voelker Cloth Press
1—66" Gessver XX Cent. Cloth Press
2—50" Dinsmore Inspecting, Sewing & Rolling Machines, Mtr. Dr.
1—60" C & M Plush Shear
3—66" C & M 2-Blade Shears
3—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Montsford 2-Blade Shear
1—Schultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C. & M. 5 Burner Gas Singer
3—204 Sp. Lowell 2¼" Ring Band dr. Spinners
8—120 Spindle Draper Spoolers
2—Warp Compressor Machine Co., Multiple Jack Spoolers
1—60" C & M Tiger
4—20 Spindle Universal #90 Filling Bobbin Winders, bottom supply
9—100 Spindle Foster #12 tube winders, belt driven
2—200-spindle Draper 2¼" Ring Tape Drive Twisters
2—82" D. & F. Warpers with Beamers, etc.
1—Barber Coleman Auto. Warp Tying Mach., size 4-E.
2—60" Edge Stenciling & Winding Machines
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
1—98 Spindle Abbott Auto. Winder

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. MLC 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

100—Crompton & Knowles 600 hooks double list, Jacquard machines all complete with levers, connecting rods, bottom cranks, glass rods, glass rods frame in excellent condition, at a very attractive price

20—Crompton & Knowles Worcester, 2 x 1, 52" looms, roller bearing, shock absorber, individually motor driven, 20 harness heads.
16—Crompton & Knowles Worcester, 4 x 4 looms, heavy rail front and back, 20 harness dobby and multiplier, individually motor driven, in excellent shape.
24—54" and 56" Crompton & Knowles Worcester looms, 4 x 4, 20 harness dobby and multiplier, individually motor driven.
20—Loom 82" 4 x 4 Crompton & Knowles Worcester for woolen or worsted.
16—Draper looms, Modified D for 54" goods.
20—Crompton & Knowles 75" automatic looms, filling mixers, 2 x 4, individually motor driven, bobbin changing.

Looms
Warpers
Winders
Coppers

Jacquard machines
Spinning and throwing machines
Finishing machines

Dyeing machines
Textile motors
Shuttles—Quillers
Harnesses

CONTACT US FOR QUICK ACTION ON TEXTILE EQUIPMENT

PATERSON
SILK MACHINERY EXCHANGE

24 SPRUCE STREET — ***SHERWOOD 2-1363-4 5*** — **PATERSON, N. J.**

FOR SALE

A COMPLETE FRENCH WORSTED DRAWING AND SPINNING UNIT

2—2 Head Open Gilling—Gill Boxes (Prince) (Smith)
1—S.A.C.M. 4 Head 8 Bobbin Weigh Box 1905 Intersecting
1—S.A.C.M. 8 Head 3rd Gill Box 1929 Intersecting
1—S.A.C.M. 10 Head Reducer 1911 1 9/16" Front Roller 2 15/16 Back Roller
1—S.A.C.M. 16 Head Slubber 1926 1 9/16" Front Roller 1 15/16" Back Roller
2—S.A.C.M. 16 Head Inter. 1926 1 3/16" Front Roller 1 9/16" Back Roller
1—8 Head Platt Reducer 1921 1 5/8" Front Roller 1 15/16" Back Roller
1—16 Head Platt Slubber 1921 1 1/4" Front Roller 1 5/8" Back Roller
2—16 Head Platt Inter. 1921 1" Front Roller 1 5/8" Back Roller
1—48 Head Platt Rover 1905 1" Front Roller 1 5/8" Back Roller
1—48 Head Platt Rover 1921 1" Front Roller 1 5/8" Back Roller
2—48 Head Platt Finishers 1921 1" Front Roller 1 5/8" Back Roller
2—24 Head Platt Inter. 1922 1" Front Roller 1 5/8" Back Roller
6—600 Spindles S.A.C.M. Mules 1911 1 7/16" Gauge
Including bobbins and miscellaneous parts for the unit

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1—Sargent Yarn Conditioning Machine.
1—P&W Full Decater with Nash Pump for 72" goods.
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1—Klauder-Weldon Skein Dyeing Machines.
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1—Buhlmann 100 roller cap. 14-color skein dyer.
1—Franklin 500# Package Dyer.
1—1000# Raw Stock Dyeing machine.

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6—V.V & Tolhurst 54" & 60"; rubber & copper baskets.
1—V.V. Fletcher & Tolhurst 40-48", copper lined.
1—Tolhurst, American Laundry, Bock, & Troy 14"42", copper baskets.

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1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—Compartment 30' Washer, 66" wide.
2—Hunter 6 string washers.

CALENDARS

2—V.V. Ball Bearing Calendars, 50" & 60".
1—V.V. Butterworth & Textile 3, 6 & 7-Roll Hydraulic Calendars, 80".
3—Butterworth & Perkins 48", 54" & 80" 3-Bowl Schreiners.
1—Butterworth 3-Roll 54" Friction Calendar.
2—54" Embossers.

SHEARS

3—P & W 2-Blade Shears, 60" & 66½", complete with list saving device and brushes.

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3—P & W & Gessner Full Decaters, 72", complete.
1—Yale Semi-Decater, complete.

DRYERS

3—National & P & S Loop Dryers, 36-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 45", automatic feeder.
3—Sargent & Hunter Wool Carbonizers.
1—Truck Dryers, 1 & 2 trucks.
1—Multipass Airlay Dryer.
5—Proctor & Schwartz Yarn Dryers.

NAPPERS

2—D & F single acting Nappers, 60 & 84".
2—Gessner & Woonsocket double acting Nappers, 60", 84" & 90".

TENTER FRAMES

1—Textile Fin. Mach. 90' x 50" Tenter.
1—W & J 80' x 50" Swing Tenter.
1—Heathcote Pin Tenter.
1—25' Tenter with Bakelite clips.

PALMER QUETCHES & TENTERS

2—V.V. Palmers, 60" & 72".
3—Morrison & V.V. 50" 60" & 72" Palmer Quetches.
1—Butterworth 84" Palmer Quetch with Tenter.
2—V.V. & General Machine 60" Palmerettes.

PADDERS, MANGLES, QUETCHES

5—Textile & Butterworth 2-Roll Padders, 50", 62" & 90".
1—Butterworth 50" 2-Roll Starch Mangles.
1—James Hunter 50" Water Manger.
3—Butterworth & Morrison 2 & 3-roll Quetches, 50-72".

BUTTON BREAKERS

5—Morrison & V.V. Button Breakers, 50-72", brass rolls.

BEAMERS—BATCHERS

1—Van Vlaanderen 50" & 60" Beamers.
5—Batchers, 48", 50" & 72".

Special

15 sets D & F 2-cylinder Worsted Cards 48 x 48 all-iron cylinders. Can be inspected. Subject Prior Sale.

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1—Butterworth 30' Cast Iron Ager, 50".

1—P & W 72" Decater, complete.

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4—E & Hall Flat Folders, 42"-60", with motors.
3—P & W & Windle 46"-60" Doubling, Reeling & Measuring.

TUBERS

10—Tubing & Measuring Machines, 50" & 60", with motors.

SEWING MACHINES

5—Merrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

PRESSES

1—Logemann All Steel Paper Baler.
3—Gessner 66" & 72" Wool Presses.

SLASHERS

8—Saco-Lowell & Johnson Rayon & Cotton Slashers.

DRY CANS

416—Dry Cans, 50" to 112" face, 23" to 84" dia.

PRINTING MACHINES

7—R. B. & F 1-10 color Print Machines, 40-60".
1—Waldron 4-Color Wallpaper Print Machine.
1—V.V. 10-color Ribbon Print Machine.

PRINT MACHINE EQUIPMENT

3—BTA Motors, 25, 35 & 50 horsepower.
Star gears, mandrels, copper pans & doctor blades.

ENGRAVING MACHINERY

10—Pantograph Machines, 52"-60" face.
3—Turning Lathes, 60-64" face.
4—Polishing Lathes, 60-72" lg.
1—Etching Trough, 54".

AGERS

4—Butterworth Cast Iron Agers, 12', 18' & 30' long x 50-60" wide.

KETTLES

16—Textile Copper Steam Jacketed Color Kettles, tilting, agitated, 240-150 gallons.

CARDING MACHINES

6—Sets D & F Worsted Cards, 60" x 54".
2—Sets D & F Worsted Cards, 60" x 48".
2—Sets S & F Worsted Cards, 54" x 54".
2—Furbush Worsted Cards, 48" x 48".
19—Sets D & F Woolen Cards, 48" x 48".
1—Sample Card, 48" dia.
15—D & F Breaker & Finisher Cards, 48" x 50".
8—Sargent, Bramwell & Harwood Feeds, 26-72".

SPINNING MACHINES

2—Large Package Mules, 240 spindles.
155—Whitin & D & F Spinning Frames, 240 spindles, 252, 2" & 3" gauge, band driven.
109—Deliveries H & B Drawing Frames, 12" coilers.
12—Universal #50 & #90 Winders.
133—Fletcher double deck Twisters.
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20—C & K 82" Woolen Looms, motor driven.
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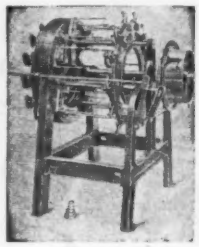

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of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and braids, etc.

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in various makes, for hundreds of uses such as: cords, twines, rope, quimpe, wire, etc.

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for use in the manufacture of nettings, cloths of all types, rug materials, curtains, elastic girdle fabrics, hosiery webbing, shoe cloths, pocketbook materials.

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of all types and makes for threading, winding and spooling. We have been handling above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.

All above priced for quick sales. Quite a few knitting and braiding machines set up on our floors, where all machines are located. Machines in operating condition with material such as nets, rugs, dish cloths, cords, flat plain and fancy braids in them.

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7—7" Copper Cans 56" wide
7—5" Copper Cans 56" wide
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1—Ping-Pong Machines
1—Wool Top Back Washer
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2—54" Simpson Winders
1—40' Straight Tenter 102" wide
2—45" B.B. Scutchers
1—V. Vlanderon Mixer with 15 HP Motor
1—66"—5 Bowl Watermangle
2—50"—6 Bowl Calenders—Roller Bearings
1—PHA. Continuous Skein Dryer
1—30" Hydr. 3 Roll Calender for Narrow Fabrics
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30" LOOMS

76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

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2—Smith & Furbush Cards, 4 lickerin type, 2 cylinder 54x54. All iron except doffers and workers.
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1—Saco Lowell Double Can Gill Box ½" pitch.
1—Hall & Stell 48 spindle Flyer Roving Frame 4½" pitch, 5x3 bobbin.
5—Hall & Stell 164 spindle Cap Trap Dolly Roll Twisters 3½" pitch.
2—Prince Smith Universal Ring Trap Twisters, 160 spindles, 4 ply, 3½" pitch, 6x2½" bobbin.
2—Prince Smith Universal Ring Trap Twisters, 188 spindles, 4" pitch, 6" traverse.
1—Prince Smith Universal, 156 spindle Ring Trap Twister. Year 1926, 4½" pitch, 7½" traverse bobbin.
1—Fales & Jencks 160 spindle Ring Novelty Twister, 4" pitch, 6½" traverse.
2—Collins Bros. 200 spindle Ring Novelty Twisters 3½" pitch, 6½" traverse.
2—100 spindle Foster Doublers, Model 25.
1—Foster Doubler Model 25, 80 ends.
1—Foster Cone Winder Model 12, 80 ends.
1—Foster Cone Winder Model 101. Changed to wind worsted yarns. All parts new, together with a moisture conditioning attachment, in practically new condition.
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6—Single Drum Jackspoolers.
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1—Volker Press 66" cylinder, 16" dia.
2—Gassner Jumbo 66" Presses with overhanging reduction gears, rolling and folding attachments. Clutch driven.
1—Gassner 80" Single Acting Napper.
1—Green Single Acting Napper 12 rolls, 77" wide.
20—Crompton & Knowles Dobby Head Looms, 24 harness, 76" Reed Space. 4x4 box.
20—92" Crumpton & Knowles Looms 4 x 4 Box.
2—Dress. Reels.
3—Warp Beamers.
2—Warp Compressors.
6—Spoolers.
1—Parks & Woolson 4 roll Brushing Machine, 69" rolls.
1—Parks & Woolson Dewing Machine with folder 78" wide.
3—Parks & Woolson Weaving Perch Clocks. Excellent condition.
2—Johnson & Bassett Bobbin Winders 96 spindles.
1—Rodney Hunt Fulling Mill.
2—Chinchilla Machines.
1—Parks & Woolson Single Shear.
1—Parks & Woolson Double Shear.
2—24 end Spool Stands for 2 spools.
2—30 end Spool Stands for 2 spools.
2—Hunter Dolly Washers. Clutch driven, 1 has water box in rear; 1 has water manifold in rear. All good coils.
1—18" Centrifugal Extractor. Bevel gear top.

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Parkhurst 48 in. DUPLEX BURR PICKER
2—WHITIN 50 inch CARD FEEDS
One SPENCER OILER for PICKER
15—TOMPKINS KNITTING TABLES

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4—PAYNE 40 sq. BOTTLE WINDERS

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100—Draper Model K 45" Looms, Belt Driven, 8" Bobbin.
118—4 x 1 C & K Automatic Looms, 48½"
20—4 x 1 C & K Hand Threading Looms, 43½"
190—1 Box Automatic Hopedale Plain Looms.
600—Draper Automatic Looms with Slashing Auxiliary equipment.
200—C & K 2 x 1 Looms.

200—600 hook C & K Double lift Jacquard heads.
32—C & K #1304 Fine Index Double lift single cylinder heads.

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1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll, Motor Driven.

EXTRACTORS

1—American 48" Open Top, Motor Driven Extractor, Copper Basket.
2—Van Vlaanderen 60" Motor Driven Extractors.
2—60" Steam Driven Centrifugal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

TENTER FRAMES

1—30" Pin Tenter Frame with Motor and Reduction Box.
1—Van Vlaanderen 30' Tenter Frame, equipped with Stainless Steel, High Speed Spring Type Clips, Reeves Variable Speed Transmission. A.C. Motor.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.
1—Textile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.
1—Windsor & Jerauld 70' long, 60" wide Tenter Frame, Brass Side Opening Clips.

BRUSHING MACHINE

1—Curtis and Marble 58" type 2-1 Brushing Machine equipped with 2 soft brushes 9" dia. and 1-2 h.p. Motor.

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1—Set of 20 Cans Textile Copper Cans, 23" diameter, 54" face, Vertical Stack.
1—Set of 18 Cans, 23" x 54" Face, Vertical Stack.
1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.
1—Set of Textile Dry Cans, 15 Cans, 23" x 78".
1—Textile Finishing Machinery Company set of 8 Copper Cans—2 Stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.

LOOP DRYER

1—Proctor & Schwartz Loop Dryer, 50" wide, 20' long, 3 Overhead Fans, Steam Heating Coils.

COTTAGE STEAMER

1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

DYE BECKS

1—Stainless Steel Lined Sample Dye Beck.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.

SPECIAL
ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph machines, Double Bar, #1381-1387.
10—John Hope 48" Pantograph machines, Double Bar, #1388-1397.
1—John Hope 45" Pantograph machine, Double Bar, #1398.

SPECIAL
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2—Complete Murry Cotton Gins.

1—Kitson Bale Breaker, consisting of:

1—Automatic Feeder, 37½"

1—2 Beater Breaker Picker, Ball Bearing Beaters, 1—16" Porcupine Beater, 1—16" 2 Blade Beater, Motor Driven by 2—5 HP 440 Volt Motors.

3—Kitson 40" Intermediate Pickers with 2 Blade Ball Bearing Beaters, 16", and 12' Apron, Motor Driven.

3—Kitson Finisher Pickers, 2—16", 2 Blade Beaters, Ball Bearing, 12' Apron, Motor Driven.

39—Saco and Pettee 40" Revolving Flat Cards, 27" Doffers, 12" Coilers, 5 Point Settings, Spindle Back.

108—Deliveries, Saco and Pettee Drawing 1⅜" Metallic Rolls, 12" Coilers.

10—Saco and Pettee 11½ x 5½ Slubbers.
(1) 40 Spindles
(4) 52 Spindles
(5) 60 Spindles

2—Providence Slubbers, 11 x 5½, 60 Spindles, 1¼" Front Rolls, Serial No. 8400 Range.

11—Saco and Pettee Intermediates, 9 x 4½, 92 Spindles, 1¼" Rolls.

26—Sacco and Pettee 7 x 3½ Speeders, 152 Spindles.

105—Fales & Jenks Spinning Frames, 240 Spindles, 2¾" Gauge, 1⅜" Rings, Whitin, Medium Spindles, Band Driven, 7" Cylinder, Wood Thread Boards, Motor Driven by 5 HP A.C. 440 Volt Motors, V-Belt Drive.

45—Fales & Jenks 220 Spindle Twisters, 3" Gauge, 2" Rings, Wood Thread Boards, 8 Slat Wood Creel, 7½ H.P. Motor Drive, 440 Volt, Clover Leaf Heads.

15—Easton Burnham and Draper Spoolers.

15—Universal #50 Winders.

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Wildman, Scott & Williams, Brinton, Supreme.

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1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 50 Volts, 60 Cycle, 3 Phase, 900 RPM, Type M.T., with Drum Controller, Magnetic Switch and Grids.
1—Van Vlaanderen 3-Roll Finishing Calender, Wool Felt Bowls, Large Diameter.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallons capacity.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

DOUBLERS

2—Parks & Woolson 54" Doubling and Reeling machines.
1—Van Vlaanderen 60" Doubling and Winding machine.

PRINTING

1—Set of Textile Finishing Machinery 8 Copper Cans, 2 Stacks, 4 to a stack, Vertical Stacks, 50" wide.

PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

SPECIAL

5—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with one DeLaval Worm Reduction Gear Unit, direct connected to Lincoln 10 H.P. A.C. Motor, 550 Volts, 60 Cycle, 3 Phase, 1200 RPM with Control.
1—Battery of 4 Morrison Stainless Steel Dye Jiggs, 50", A.C. Motor.
500—Butterworth Tenter Chain Clips, Type O-O Opening, Brass Faced Clips.

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CALENDER, 3 roll, King & Gerber, 60"
CALENDER, 3 roll, Finishing, 45"
DRY CANS, set of 37, copper 112" syphon type, mangle
DRY CANS, set of 12, copper 28" dia.x50" face, vertical arrangement
DRYERS, Net Conveyor, 50" & 60" wide
DRYERS, LOOP, Proctor & Schwartz
DYE TUBS, Copper, Skein, various lengths
BEAM EXTRACTORS, 50" Van Vlaanderen
EXTRACTOR, 60" Van Vlaanderen, rubber basket, with loading device
EXTRACTOR, 48" Hercules, tinned copper basket, Open top
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FLOCK STENCIL MACHINE, with patterns
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GE SYNCHRONOUS MOTOR GENERATOR, AC 2300 volts to 125 KW DC
INFRA RED units complete with blowers
KETTLE, copper tilting, 65 gal. cap. 30"x26"
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PALMER PIN TENTER, Mangle unit 84"
PALMERETTE 60" face, General Machine
NASH #3 Pump, bronze casing
PRINT MACHINE, R. B. & F., 7 color, 60"
RIBBON FINISHING UNIT, complete, quetch cans, calender, motor
RIBBON PRINTING MACHINE, 7 color
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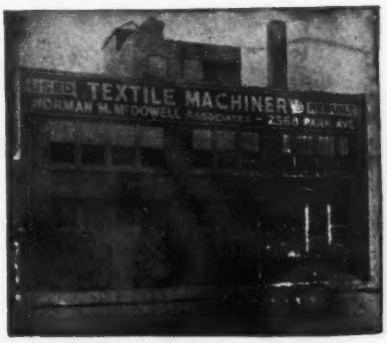

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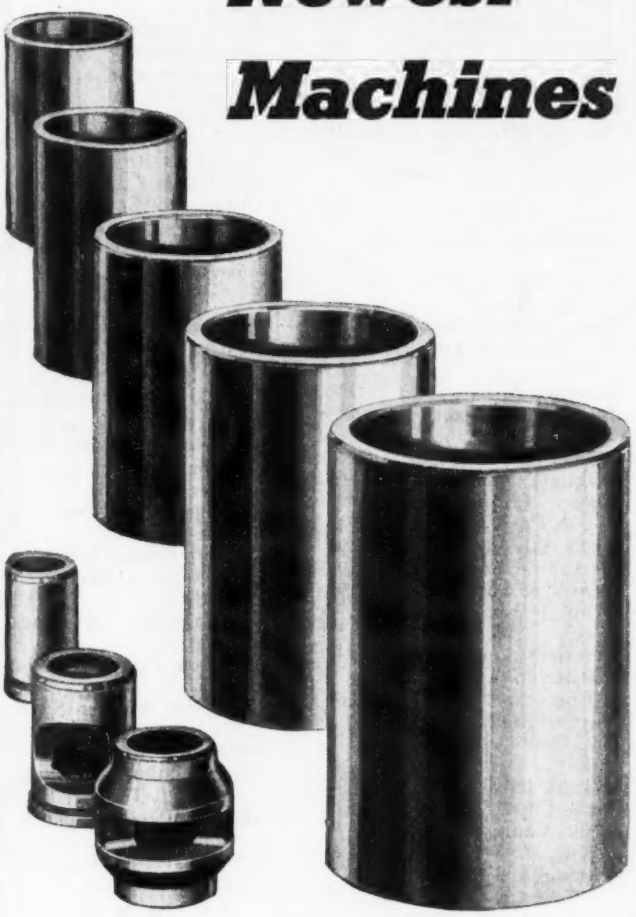
In the Newest Machines



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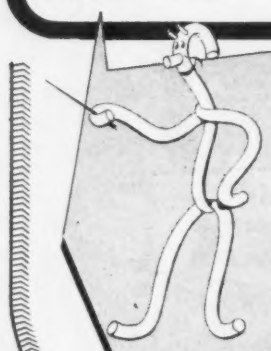

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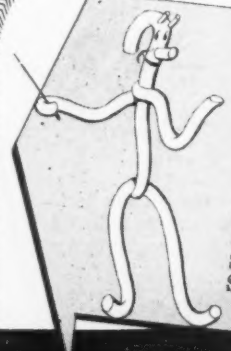

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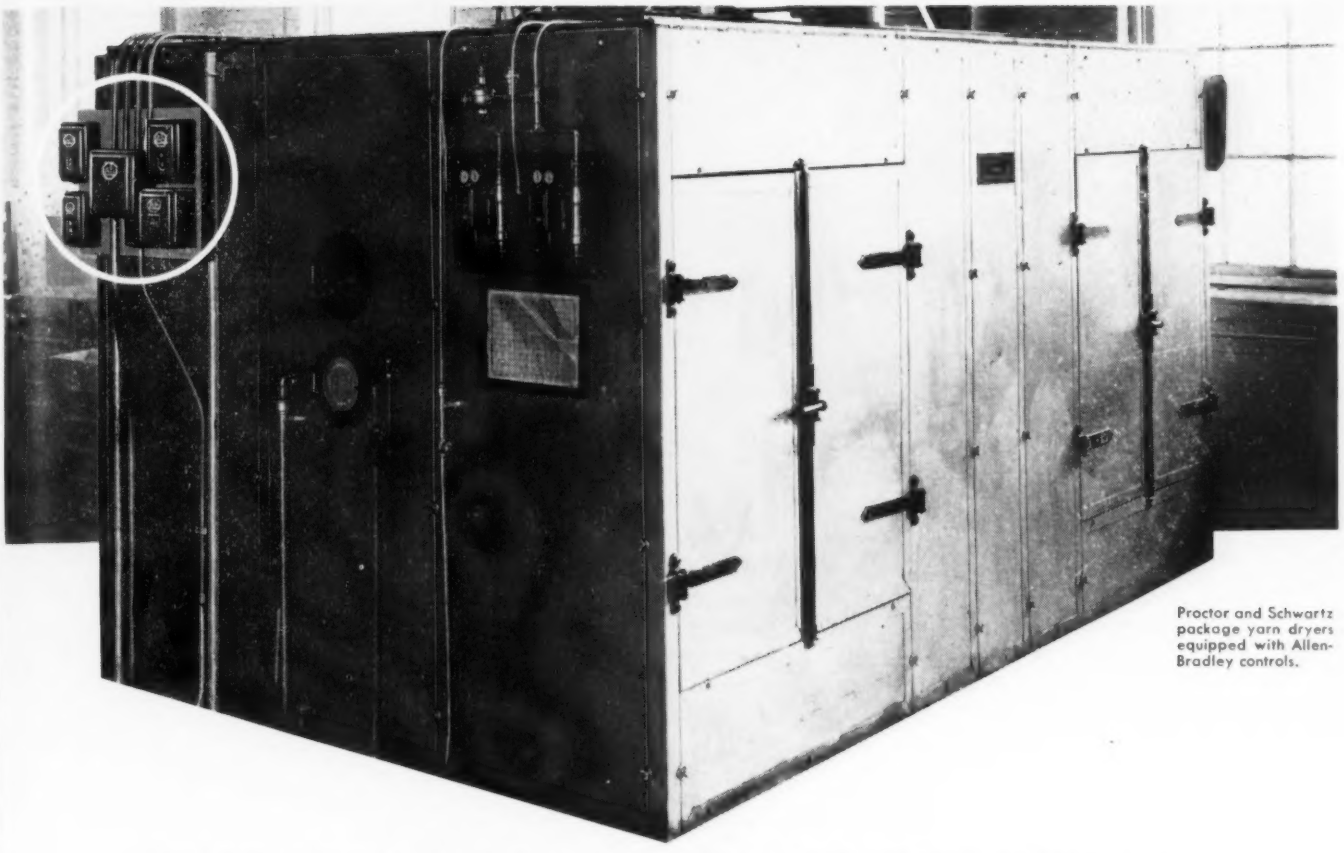

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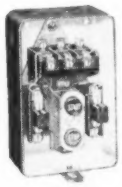

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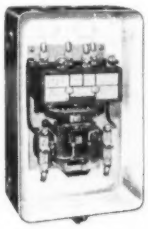
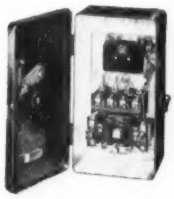
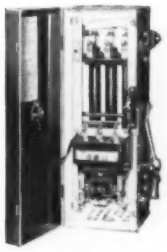


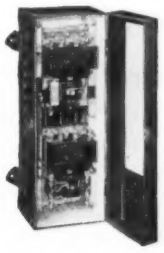
AUTOMATIC ACROSS-THE-LINE STARTERS



COMBINATION STARTERS



MANUAL RESISTANCE STARTERS



AUTOMATIC RESISTANCE STARTERS

ALLEN-BRADLEY

QUALITY

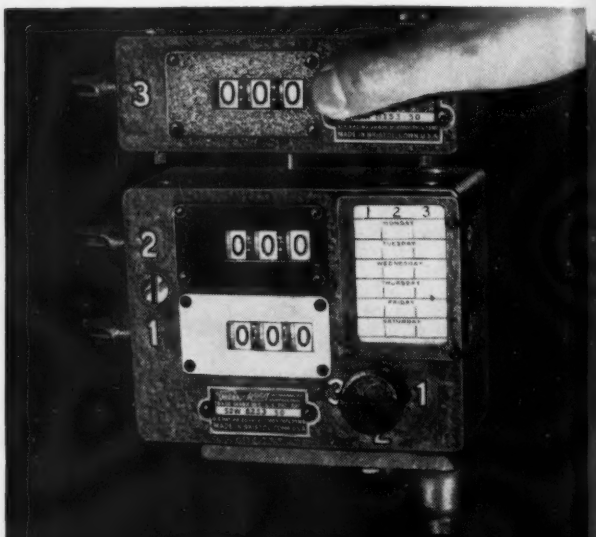
MOTOR CONTROLS FOR TEXTILE MACHINERY

Steer Clear of Gaps in Production Records

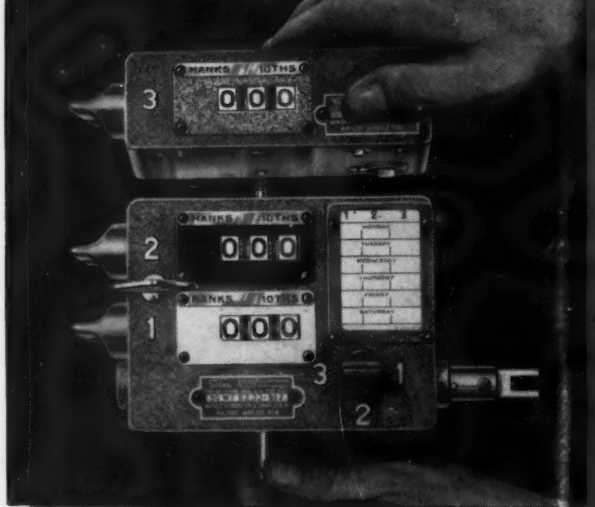
. . . WITH THE HELP OF THESE VEEDER-ROOT CHARTS & PADS

FOR YOUR

2-3 PICK AND HANK COUNTERS



ABOVE: 2-3 Pick Counter
BELOW: 2-3 Hank Counter



These handy aids to proper counter-maintenance have proved big helps to mills in preventing gaps in production records on looms, frames, calenders, cards and other mill machinery. One set of charts and pads is for 2-3 Pick Counters . . . the other set for 2-3 Hank Counters. And in each set, the chart (in full color, on heavy cardboard, punched for hanging up) shows each point to check on each counter . . . where and how to oil, what brackets, pins, and connections to check, etc. Then each pad provides 100 check sheets on each of which your hands can check the maintenance needed *and attended to*, on 20 counters.

These charts and pads are offered to you *free* by Veeder-Root . . . as a wartime service to help you get out of your Veeder-Root 2-3 Counters all the service that's built into them. If you have not already secured *yours*, write how many 2-3 Pick and Hank Counters you have in operation, and you'll promptly be sent an ample supply.

VEEDER-ROOT INCORPORATED

The Counting House of Industry

77204

Hartford 2, Conn. ★ Greenville, S. C.

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